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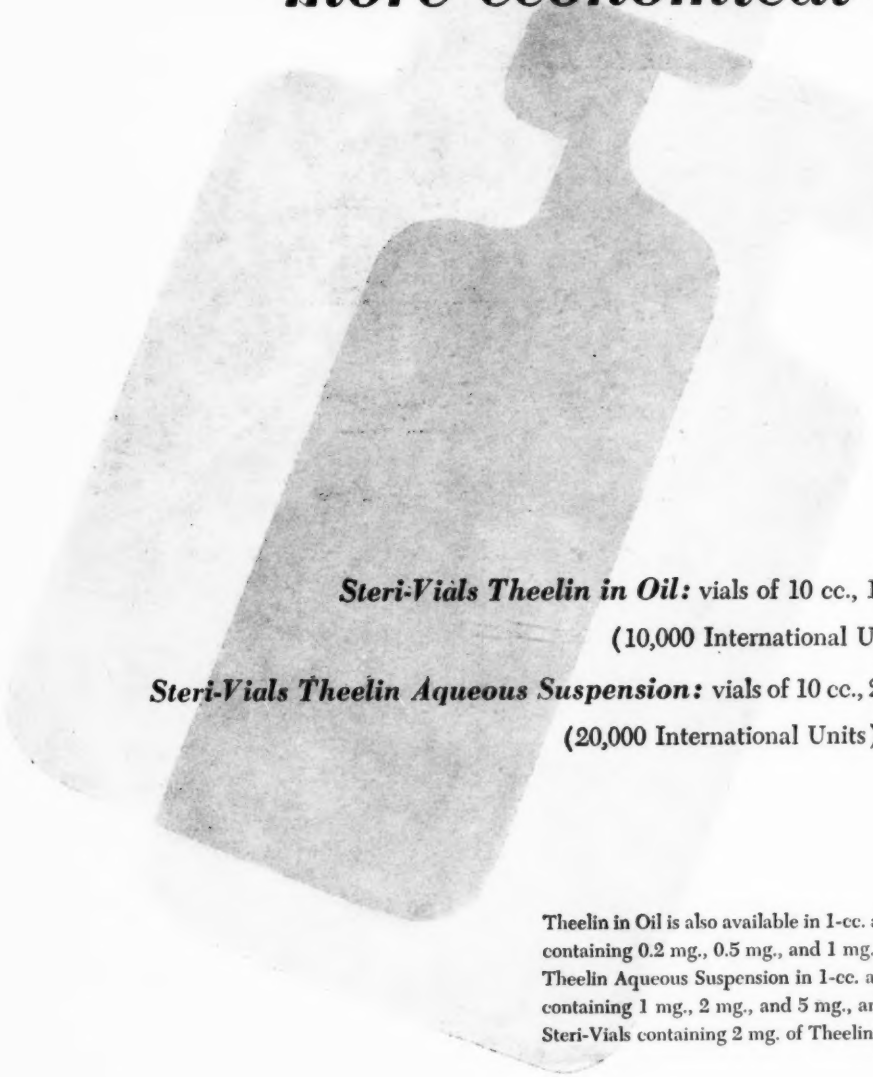

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Diagnosis in Heart Disease

ELWYN EVANS, M.D.
ORLANDO

Evaluation of a patient with possible heart disease should be methodical. Determination of why the patient is seeking medical advice is just as important in the diagnosis of heart disease as it is in diagnosis generally. If this reason is not elicited, the examination may be a failure. The patient usually consults a physician because of the fear of heart disease, symptoms which might be caused by heart disease, or knowledge of some cardiac abnormality such as enlargement or a murmur; however, more and more patients are requesting routine check-ups.

The commonest symptoms or signs which attract the patient's attention are palpitation, tachycardia, pain in the chest or arm, dyspnea, swelling of the lower extremities and cyanosis. To evaluate these properly one should obtain a detailed history, make a general physical examination and perform laboratory tests as indicated. White[1] stated that in his experience the history and physical examination are worth approximately 80 to 85 per cent, the electrocardiogram 10 to 15 per cent, and the roentgen examination, including fluoroscopy, 5 per cent. In an individual case, the electrocardiogram may be worth almost 100 per cent and in another it may be worth little or nothing; the same holds true for the roentgenogram.

Any or all of the symptoms or signs mentioned may or may not be caused by heart disease, and many of them may be associated with functional nervous states. The three most important symptoms of cardiovascular origin are pain in the chest, respiratory distress and palpitation.

Read before the Florida Medical Association, Seventy-Sixth Annual Meeting, Hollywood, April 25, 1950.

Pain in the Chest

Pain in the chest and referred pains are of several kinds.[2] Precordial aching, usually maximal in the region of the left breast, is the commonest. It lasts for variable periods of time, sometimes radiates down the left arm and is frequently associated with tenderness of the chest, an important clue. It is caused by hypersensitivity of the nervous system from fatigue or other cause. Frequently it occurs in neurocirculatory asthenia or cardiac neurosis. Short, sharp precordial stabs of pain are frequently caused by premature beats in sensitive persons. Both types of pain may come on any time, especially during fatigue, are not related to excitement or exertion and are not relieved by nitroglycerin. When heart disease is present, it is superimposed. The substernal oppression of coronary insufficiency usually comes on with excitement or exertion, particularly after meals, especially in cold weather. It builds up gradually, lasts a few minutes, often radiates to the left arm, occasionally to the right or both arms, the neck, jaw or back, and is immediately relieved by nitroglycerin.

The electrocardiogram frequently shows evidence of coronary disease and when it does not, latent changes can usually be elicited by anoxemia or exercise tests.[3,4] These tests are not entirely safe; however, Master[5] when exercising the patient according to his standards based upon the patient's age, sex and weight has never experienced a serious complication. When similar but possibly more severe distress lasts an hour or more, occlusion of one of the coronary arteries is likely. In myocardial infarction, the electrocardiogram usually shows serial changes with Q waves. When infarction occurs, fever, leukocytosis and increased sedimen-

tation rates also appear. The benign form of acute nonspecific pericarditis is a common disease which is usually overlooked and most commonly diagnosed as coronary occlusion. Acute pericarditis may produce pain similar to that of coronary occlusion, except that it frequently follows respiratory infections, is usually aggravated early by body motion, deep breathing or even swallowing,[6,7,8] and is usually associated early with a pericardial friction rub which is sometimes widespread. When friction rubs occur following myocardial infarction, they do not appear for several days to a week and are likely to be localized. In pericarditis, serial electrocardiograms generally show RS-T and T changes without significant Q waves. Specific diagnosis is important because treatment as well as immediate and ultimate prognosis is quite different in acute benign nonspecific pericarditis from that in coronary occlusion.

Pain caused by a diaphragmatic or hiatus hernia may also simulate coronary disease,[9] but it is not so apt to be associated with excitement or exertion except for stooping, is more likely to be related to meals, is not so consistently relieved by nitroglycerin and is not associated with fever, leukocytosis or Q waves in the electrocardiogram. Pain of an aortic aneurysm is a severe, more or less constant pain in the upper part of the chest, in the neck or in the shoulders. That of a dissecting aneurysm of the aorta is a sudden, excruciating pain located substernally or in the back and radiates from the front to back or vice versa, often down the back to the legs.

Dyspnea

Dyspnea may be due to many causes other than cardiac, especially respiratory diseases such as asthma, emphysema, pulmonary fibrosis, bronchitis and bronchial or trachial obstruction, and functional states such as neurocirculatory asthenia. When pulmonary disease is the cause, the disease usually can be diagnosed, and unless heart disease is superimposed, no cardiac abnormalities can be determined except possibly right ventricular enlargement secondary to pulmonary hypertension. Slight right ventricular hypertrophy is difficult to detect because the right ventricle lies anteriorly, but significant enlargement can be seen in the right anterior oblique position fluoroscopically. Electrocardiographically, there may be right axis deviation or inversion of the T waves in leads II and III and over the right side of the precordium. The R waves become taller over the precordium on the right side and the S waves larger over the precordium on the left. In fact, prominent R waves may be observed well to the right of the sternum.[10] When there is sufficient pulmonary hypertension to cause right ventricular strain, the second pulmonic sound is increased and is frequently louder than the second aortic sound in the upright position; it may be louder in recumbency in many normal adults.[11]

The arms to tongue circulation time is not prolonged when dyspnea is secondary to pulmonary disease, but it is when heart disease is the cause. Only occasionally is determination of the circulation time helpful, however, and that is in questionable cases. One method of determining it is to inject 3 cc. of decholin into the antecubital vein with the vein 10 cm. above the level of the bed and the patient at rest in recumbency. The normal ranges from seven to seventeen seconds. Although decholin commonly has been used to differentiate asthmatic from cardiac dyspnea it should not be used in allergic patients because of the rare possibility of a fatal reaction.

Dyspnea secondary to heart disease is caused primarily by exaggerated reflex action on the respiratory center because of engorgement of pulmonary vessels. Such engorgement is caused by mitral valvular disease or left ventricular failure. Pulmonary edema increases the dyspnea, which may be exertional or paroxysmal and nocturnal. If the latter is associated with asthma, it is called cardiac asthma. When mitral valvular disease, stenosis or insufficiency or both, is present, the characteristic murmurs should be audible. The mitral diastolic murmur is best heard in left lateral recumbency after exercise. In mitral stenosis, the first apical sound is usually accentuated, and auricular fibrillation is not uncommon.

When left ventricular failure is the cause of dyspnea, the left ventricle should be enlarged, and if enlargement cannot be detected, another cause should be carefully sought. When the left ventricle is enlarged, the cause usually can be determined. The commonest causes for enlargement are valvular disease, arterial hypertension and coronary disease. Less common causes are congenital defects such as coarctation of the aorta or patent ductus arteriosus, hyperthyroidism, myxedema, beriberi, and other rarer diseases. When the aortic valve is involved, it may be caused by rheumatic fever or syphilis, rarely congenital defects. Failure from syphilitic aortitis with aortic insufficiency usually appears at 40 to 60 years of

age, that from rheumatic disease often earlier, and recurrence of active rheumatic infection is not uncommonly the precipitating factor. There is no associated aortic stenosis in syphilis, an important distinguishing factor.[12]

Murmurs at the apex occasionally are confusing because of relative mitral insufficiency and stenosis and the Austin Flint murmur. The high-pitched, blowing diastolic murmur of aortic insufficiency is best heard in the erect posture during expiration with the patient leaning forward. The serologic reactions may be positive, a history of syphilis may be obtained, or other stigmas of syphilis such as the Argyll Robertson pupil may be present. In rheumatic valvular disease a history of rheumatic fever, growing pains or chorea can often be elicited. When rheumatic aortic insufficiency is present there is a variable degree of aortic stenosis, and in approximately 95 per cent of the cases the mitral valve is also involved. When hypertension is the cause of left ventricular enlargement and failure, the diagnosis is generally easy. In those cases in which the arterial pressure is not significantly elevated, a history of hypertension and changes in the eyegrounds showing arteriovenous nicking, exudates or hemorrhages are helpful.

Regardless of the cause of left ventricular enlargement, the electrocardiogram is likely to show changes suggestive of such enlargement. Left axis deviation may or may not be present. RS-T segments are depressed in lead I and over the precordium on the left side, and the T waves are often diphasic (minus-plus type) in these leads.[13,14] Other findings are increased amplitude of the R waves in lead I and especially leads over the left side of the precordium; they are decreased over the right side of this area where the S waves are enlarged.[15] When coronary disease is at fault, a history of angina pectoris or coronary occlusion is frequent, and the electrocardiogram usually shows evidence of coronary insufficiency or myocardial infarction.

Regardless of the cause of left ventricular failure, tachycardia of some sort not uncommonly precipitates the failure. Hypermetabolism and anemia per se rarely cause dyspnea, but they aggravate any tendency that may be present.

Palpitation

Palpitation is a common but less important symptom than pain or dyspnea. It is an unpleasant sensation of the heart beat whether it is slow or fast, regular or irregular, and usually occurs in nervously sensitive persons.

Edema

Edema and cyanosis are the two most important signs. Edema of the extremities is of the dependent type, maximal in the shins and ankles with the patient upright and over the sacrum with the patient recumbent. In an ambulatory patient, unilateral edema is caused by some local disturbance in circulation. Even bilateral edema is more likely to be on a noncardiac than on a cardiac basis, especially a disturbed venous circulation such as venous obstruction or dilatation. Digitalis has no effect on dyspnea or edema that is not of cardiac origin. When edema is secondary to left ventricular or pulmonary disease and subsequent right ventricular failure, the disease should be diagnosable. If none of these causes is evident and the venous pressure is elevated, pericardial or tricuspid disease should be looked for. In pericardial effusion and chronic constrictive pericarditis, the heart sounds tend to be weak, the pulsations feeble and the pulse pressure narrow with a low systolic pressure, and evidence of calcium deposits may be seen on the roentgenograms, especially the lateral view. In effusion, the cardiac silhouette is increased, and fluid may be obtained by pericardiocentesis; in constrictive pericarditis, the cardiac silhouette tends to be small. In both, murmurs are slight or absent.

Tricuspid disease is difficult to diagnose. It has the same etiology as mitral disease and invariably is associated with it. The murmurs are similar to those of mitral disease and are heard nearer the midline, but the invariable involvement of both valves complicates the diagnosis. A striking feature of patients with tricuspid disease is that enlargement of the liver may be present for years without serious discomfort or dyspnea, even in the presence of ascites and possibly hydrothorax. The right side of the heart is invariably enlarged. With tricuspid insufficiency one can observe pulsations of the liver and the veins of the forehead or forearms. In both tricuspid disease and constrictive pericarditis, the venous pressure is elevated. The venous pressure normally varies from 6 to 10 cm. of water. A simple but satisfactory clinical method of measuring it is to determine the distance the veins of the neck are distended above the lower edge of the right third costochondral cartilage. They should not be distended above the clavicle with the patient erect.

Cyanosis

There are numerous causes for cyanosis — cardiac, respiratory and others. Unless it is pro-

nounced and permanent, it is often caused by local circulatory disturbances. When of great degree and produced by cardiac disease, cyanosis may be caused by left and/or right ventricular failure or by one of several congenital lesions in which venous blood is shunted into the arterial circulation, for instance, a single ventricle, dextroposition of the aorta with overriding of both ventricles, or transposition of the great vessels. Cyanosis may occur terminally in patent ductus arteriosus and interauricular or interventricular septal defects.

Summary

This material is presented to give a general idea of the problems and methods of diagnosis in heart disease without a thought of presenting complete details or anything new of significance. Clinical aspects are emphasized, but several laboratory procedures are mentioned because they are frequently useful and occasionally necessary for diagnosis.

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320 North Main Street.

Discussion

DR. E. STERLING NICHOL, Miami: Dr. Evans has summarized effectively the basic diagnostic signs in heart disease. It is impossible to overemphasize the value of a detailed history in the diagnosis of angina pectoris, which is a clinical syndrome and not a pathologic entity; so the diagnosis must be based almost entirely on the history. Analysis of pain in the chest must be detailed, and the relationship to effort, ingestion of food, aggravation, or excitement, and the rapidity of relief from nitroglycerin, amyl nitrite or whisky, all have a bearing on the diagnosis of angina pectoris. A common error is to dismiss lack of relief with "nitro" as evidence against angina pectoris without discovering that the dosage was too small to produce vasodilatation of the cerebral veins (headache). Another error is to assume because belching of gas affords relief that one is dealing with "indigestion" rather than angina pectoris. Be slow to diagnose as angina pectoris a discomfort which cannot be brought on by walking fast or up a slight grade, particularly after a meal or in cold weather. And do not be misled because the pulse is not accelerated or remains good during the attack. Many physicians and all nurses are fooled by this paradoxic phenomenon, but if they had taken the blood pressure during the attack it would likely have been elevated.

Occasionally when the electrocardiogram gives negative evidence even after an exercise tolerance test, a tracing obtained during an anginal episode will reveal definite evidence of coronary insufficiency.

Breathlessness on slight exertion is the earliest and most important symptom of left ventricular failure. Misinterpretation of the symptom "dyspnea" is a common error. Do not accept a patient's word for dyspnea, but elicit a description of this symptom as often a functional sighing type of inspiration not due to congestive failure or anginal equivalent is described by patients (particularly in this climate) even in the presence of organic heart disease. Dyspnea without left ventricular hypertrophy is usually of pulmonary origin. Dyspnea in the absence of accentuated P2 is rarely of cardiac origin. Insomnia is a frequent sign of left ventricular failure in old people and may precede nocturnal dyspnea.

I cannot agree with the author that physiologic measurements of the arm to tongue circulation time and venous pressure are seldom helpful in diagnosis. A week seldom passes that I have not been saved from error, or had my attention drawn to a discrepancy in bedside diagnosis, by the simple determination of a calcium or decholin arm to tongue time. For example, the presence of latent hyperthyroidism in patients with congestive heart failure is suggested by a normal arm to tongue time instead.

Edema of the ankles in the absence of increase in venous pressure is sure to be noncardiac in origin. If the veins of the neck cannot be filled above the normal level in the semierect position, particularly with pressure over the liver, do not attribute edema of the ankles to heart disease. Hepatomegaly of noncardiac origin can best be differentiated at the bedside sometimes by venous pressure measurements.

DR. EVANS, concluding: Speaking of nitroglycerin, I think if the patient does not get relief after taking nitroglycerin two or three times in ten or fifteen minutes, he is not going to get relief, and more harm may be done by taking more nitroglycerin because of decreased blood pressure. I will agree that some patients are more susceptible or less susceptible than others and that it is well to push nitroglycerin therapy to the point of getting fulness or pain in the head if necessary to get relief from the pain in the chest.

Speaking of walking in connection with angina, I have a patient who can walk at a certain gait without difficulty, but if he knows that he must be somewhere at a certain time, and walks at that same pace, he will have angina. So, the emotional factor is especially important, and it is one of our difficulties because we cannot evaluate the emotional problem.

With reference to the arm to tongue circulation time, I will mention this point — if the patient has any history of allergy, one should be careful about giving intravenous decholin.

Roentgen Examination in Acute Surgical Conditions Within the Abdomen

Floyd K. Hurt, M.D.
and
Bert H. Malone, M.D.
Jacksonville

The roentgen examination of the abdomen in acute surgical conditions may be of inestimable value in certain cases and in some will lead to a diagnosis. Although in the majority of cases the disease is usually diagnosed by the clinical findings and laboratory studies, there are other cases in which the diagnosis is not as apparent, and it is in such cases that the roentgen examination proves to be of greatest benefit. It is believed that a review of the changes produced by disease within the abdomen as manifested on the roentgenogram is timely and will be beneficial, for if one knows what changes to look for or expect, they can be more readily seen and evaluated. A roentgen examination is a factual study, and a knowledge of the changes produced by disease within the abdomen is necessary for correct interpretation because the significant findings are often small and easily overlooked. The examination requires no preparation of the patient and, if necessary, can be performed at the bedside with a portable unit.

Normally there is a little gas in the colon, but there is usually none in the small bowel. Frequently the stomach and duodenum can be seen outlined by gas; the liver and spleen as well as the kidneys are more or less readily apparent. The psoas muscles and the quadratus lumborum are also visible.

Roentgen Evidence of Disease

The demonstration of free gas in the peritoneal cavity is an examination which we are frequently called upon to perform. It has been our experience that gas can be most easily shown by making a single roentgenogram of the chest with the patient upright, when the gas will be seen under either leaf of the diaphragm. This examination has an advantage in that the lungs can be studied at the same time. If the patient is too sick to sit, he can be turned on his left side and a roentgenogram made in the left lateral decubitus position, when the gas becomes pocketed between the diaphragm and the liver. Free gas nearly always means a ruptured peptic ulcer. In this connection it is well to remember that following abdominal operations free gas can be demonstrated in the peritoneal cavity for as long as two weeks following surgery and does not necessarily mean a perforation or a leak.

In patients with ureteral colic the intestinal tract is frequently dilated and filled with gas. This fact is sometimes overlooked, and often we are called upon to examine these patients because their referring physicians believe that they are suffering from mechanical obstruction of the small bowel. Fortunately 90 to 95 per cent of stones in the urinary tract can be seen on the plain films. If the stone should be nonopaque, an intravenous pyelogram can be made without greatly disturbing the patient, and this will then demonstrate the block.

Mechanical obstruction of the small bowel can produce changes which are diagnostic, and it is important this condition be recognized early for it can prove fatal. If the pathologic changes occurring in the bowel are recalled, the correct interpretation can usually be made. The characteristic picture shows dilated loops of small bowel lying transversely in the abdomen in the so-called step-ladder appearance. The distended small bowel can be distinguished from the colon by the presence of valvulae conniventes, which are prominent and persist. Distal to the obstruction the bowel is not distended, and if the colon does contain gas, it is not dilated. The obstructed loops are large and dark and greater in the transverse diameter than in the vertical, and there is pronounced contrast between this bowel and the background of the abdomen. The bowel is dynamic, and repeated examinations show that the loops have different arrangements. These changes serve to distinguish

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the condition from paralytic ileus, in which the loops are unequally dilated, and at times are segmental in appearance; and in addition, there is in proportion the same degree of dilatation of the colon as of the small bowel. In the paralytic bowel the loops are shallow and not dark. In mechanical obstruction distention of the small bowel occurs early in the course of the disease, sometimes within six hours after onset, so that a roentgen examination can and should be made early. Not infrequently, the examination will have to be done again before the true nature of the condition can be determined. Although adhesions are the commonest cause of mechanical obstruction, it is seldom that the etiology can be determined from the plain film. One exception is gallstone ileus, when the gallstones can be seen and the presence of gas in the bile ducts indicates a fistula. In a few cases, there can be obstruction of the small bowel without roentgen evidence of its presence.

Obstruction of the colon in the adult is usually due to a carcinoma or volvulus. In the former, the colon is uniformly dilated down to the obstruction and is accompanied by distention of the small bowel if the ileocecal valve is incompetent. If the valve allows the small bowel to become distended, the picture can simulate the findings of obstruction of the small bowel.

In volvulus of the colon the distended loop can be seen arising up out of the pelvis on the right side and in the middle of the abdomen. The roentgen findings in this condition are characteristic and must be recognized as it requires an entirely different surgical treatment than an obstructed colon from a carcinoma. The commonest cause of colonic obstruction in children is intussusception, either ileocolic or coliocolic, and it sometimes can be diagnosed from the plain film; however, to prove the suspected lesion, a barium enema should be given.

Generalized peritonitis will cause distention of the small bowel, with loops which are fixed in position and usually of the paralytic type. The space between the loops is increased, due to the exudate, and there is obliteration of the properitoneal fat line. Localized abscesses will sometimes reveal themselves by the presence of gas which lies outside the bowel and has a configuration which does not correspond to the size or shape of the bowel. This can be especially helpful in infections about the appendix. Gas formation in an abscess may be very small in amount and must be looked for zealously, if it is to be identified. It is usually arranged in small vesicles or clusters. Gas formation in retroperitoneal abscesses usually lies in the fascial planes and outlines the psoas muscles and kidneys. Fixation of the kidneys is an invaluable sign in perinephritic abscess. It has been shown by Weens that in his series of cases the gas-producing organism was the Endamoeba coli and the anaerobic streptococci.

Summary

Roentgen manifestations of the changes produced within the abdomen in acute surgical conditions are described. The value of roentgen examination in demonstrating free gas in the peritoneal cavity and in the diagnosis of ureteral colic, mechanical obstruction of the small bowel, obstruction of the colon due to carcinoma and volvulus, and generalized peritonitis is discussed.

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418 St. James Building.

J. MAXEY DELL, JR., Gainesville: Dr. Hurt, I enjoyed your presentation and consider it most timely. Knowledge of the possibilities of the scout film of the abdomen will result in increased utilization of this valuable diagnostic aid. There is one type of intestinal obstruction diagnosed by the radiologist which the clinician is hesitant to accept, namely, the so-called "no gas obstruction." In the average case with abdominal pain or a lesion in the abdomen there is usually a considerable amount of gas, and the absence of gas in this type of case should make one suspicious. In the upright film usually there is demonstrated a small amount of gas giving a fluid level in the small bowel and establishing the diagnosis. In strangulation obstruction there is excessive fluid in one or two isolated loops of small bowel with at times demonstrable edema of the walls of the bowel that lie against each other. This is important as it definitely contraindicates the use of decompression with the tube.

It is particularly important to diagnose a volvulus of the sigmoid or cecum for a cecostomy in this type of case is valueless and results in loss of the patient. Gas distending the large bowel in its right half coupled with a high white blood cell count is suggestive of a mesenteric thrombosis. Limited movements of the diaphragm with some pleural reaction plus a separation of the gas-filled stomach and colon may be of value in pointing to the possibility of pancreatitis.

Dr. Hurt did not have time to cover all the points and permitted me to make the additions. Thank you, Dr. Hurt, for a service to both the radiologist and the clinician.

Differential Diagnosis of Low Back Pain Based on a Study of Two Hundred and Eighty-One Cases

Ralph Herz, M.D.
KEY WEST

Low back pain is one of the commonest complaints encountered in medical practice. In many cases the pain persists over long periods and fails to respond to treatment. Recently a large group of patients whose symptoms of back pain previously were undiagnosed has been found to have painful palpable nodules in the back. "Fibrositis" is the term commonly applied to this condition because the nodules were originally thought to be caused by fibrous tissue.

In 1944, Copeman and Ackerman,[1] two surgeons in the British Medical Corps, published the results of their studies of these nodules in patients and cadavers; they found that these nodules were actually herniations of fascial fat. In the cases I have studied their work was amply confirmed in the beneficial results of surgical removal of such subfascial fat hernias in a series of selected cases.[2] Since in this series of 281 cases a large proportion fall into this group with painful trigger points and nodules, or have actually been proved to have subfascial fat hernias, a study was made from the standpoint of differential diagnosis.

The most important factor in the treatment of severe low back pain is an exact diagnosis. This means that the known causes of backache must be sought in every case, since often there is more than one cause for the symptoms in the individual case. In making the diagnosis a detailed history is especially important. A history of some injury, such as a fall or strain, is present in the majority of cases; and often the onset of severe pain is attributed to some particular injury. It is important to find out the exact type of injury and its relationship to the pain of which the patient complains. A careful physical examination must be made, with thorough palpation to elicit trigger points of pain and painful nodules. Routine roentgenograms of the spine in all positions, anterior-posterior, lateral and oblique, must be made to determine whether disease or injury of the bone is present. If there is evidence of arthritis or other disease of the spine, attention should be directed to this in treatment. Frequently, however, in such cases painful trigger points or nodules are also present. The symptoms are greatly relieved by anesthetic injections even when there is actual bony involvement. Even when palpable nodules are present, their removal should never be attempted until after a thorough therapeutic test with injections of anesthetic solution. If such injections do not relieve the pain, there is indeed little likelihood that an operation for subfascial fat hernia would be beneficial.[3]

Copeman and Ackerman[1] charted the distribution of the trigger points of pain in 50 consecutive cases (fig. 1) and found that it coincided almost exactly with the distribution of subfascial fat in the lumbar and lumbosacral area (fig. 2) in an anatomic study of 14 cadavers. In my series there were 86 patients subjected to this operation. Figure 3 shows the site of incisions made. The actual size of excised fat specimens is shown in figure 4. The specimen on the right shows gross evidence of strangulation. In this case the patient was a young woman, aged 28 years, whose symptoms were so severe that an emergency operation was necessary. Microscopic studies of the excised herniated fat (fig. 5) revealed evidence of a mild inflammatory process. Numerous publications on this condition

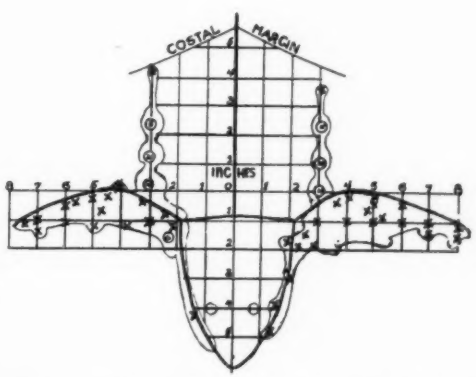

Fig. 1.— Distribution of trigger points of pain in 50 consecutive cases (from Copeman and Ackerman[1]).

Read before the Florida Medical Association, Seventy-Sixth Annual Meeting, Hollywood, April 24, 1950.

have also been written by others,[4] indicating that many patients with hitherto undiagnosed and undifferentiated back pain have obtained relief from this procedure.

In the management of patients with low back pain, it must not be overlooked that occasionally the cause of the pain is some internal disease, such as retrocecal appendicitis, kidney stones, or gallbladder disease. Hence, if a thorough investigation of the back and spine fails to account for the back pain, more general clinical and roentgenographic studies are required for a differential diagnosis.

Some of the many causes of low back pain are shown in the reports of the illustrative cases that follow.

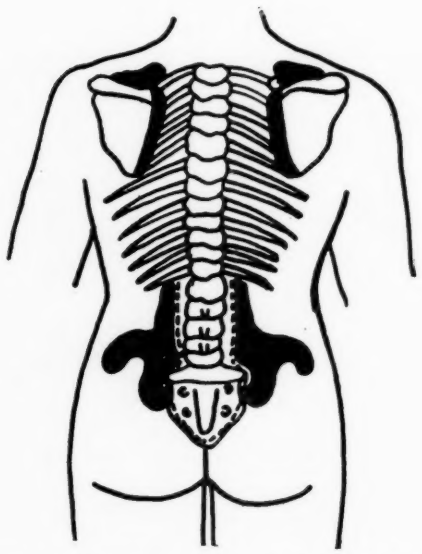

Fig. 2. — Distribution of subfascial fat in the lumbar and lumbosacral area (from Copeman and Ackerman[1]).

Report of Cases

Case 1. — A woman, aged 34 years, had had recurrent attacks of lumbago for seventeen years. Roentgenograms of the lumbar spine showed advanced osteoarthritis. In addition, she had bilateral subfascial fat hernias which were treated surgically. The arthritis has not progressed materially since the operation three years ago, and she has had no further attacks of lumbago.

Case 2. — A nurse had injured her back six months before she consulted me. The pain was first felt after lifting a heavy patient. A roentgenogram of the spine showed anterior slipping of the fifth lumbar vertebra over the sacrum. A form-fitting support enabled this patient to return to duty.

Case 3. — A man had a disrupted intervertebral disk, as shown by the defect in distribution of radiopaque lipiodol solution. This procedure is necessary only when the exact situation of the disrupted disk cannot be determined by careful neurologic examination.

Table 1.—Clinical Diagnoses in 281 Cases of Low Back Pain

Subfascial fat hernia relieved by operation	86
Painful nodules relieved by anesthetic injections	82
Painful nodules with chronic arthritis of spine	36
Post-traumatic cyst pressing on sciatic nerve	3
Incomplete cases (relief following 1 injection of anesthetic solution to painful points, but no follow-up)	45
Undiagnosed (no relief from injection of trigger points and no other cause for backache revealed)	8
Disrupted intervertebral disk (2 also had subfascial fat hernias)	6
Tuberculosis of spine	1
Fractured coccyx	2
Incomplete fracture of lumbar spine	1
Spondylolisthesis (roentgenographic diagnosis)	3
Sacroiliac dislocation (roentgenographic diagnosis)	3
Retrocecal appendicitis	3
Renal calculus	2
Total	281

Case 4. — A woman, aged 43, had had a fall two years before I saw her. A routine roentgenographic examination disclosed a fracture of the coccyx and injury to the sacrum. In addition, she had a subfascial fat hernia. This was excised at the time of operation on the coccyx, and the patient obtained satisfactory relief.

Case 5. — A woman, aged 46, had suffered from severe backache for ten years, following a fall, and had been treated for "arthritis" without obtaining relief. About a year before I saw her, she had a second severe fall which greatly aggravated her pain. For several months she had scarcely been able to sit, and there was referred pain down the left leg. She had been advised to go to a sanatorium, under the supervision of a competent psychiatrist, since all therapeutic measures had failed and her physician had concluded the pain must be psychogenic. There was a trigger point of pain in the left sacroiliac region and a large palpable mass in the left buttock. This proved to be a case suitable for operation because complete relief was obtained by injections of 1½ per cent aqueous metycaine* solution.

At operation, herniated fat was excised over the left sacroiliac region, and a large mass of dense fibrous tissue was widely excised through an incision over the left buttock. Examination of the specimen showed an organized hematoma with multiple hemorrhagic cysts. This was pressing on the sciatic nerve. The patient experienced complete relief from her disability and was able within a few months to make a 5,000 mile trip by automobile, without any recurrence of symptoms.

Case 6. — A man, aged 34 years, had had severe backache for fifteen months. A routine roentgenographic examination revealed a renal calculus. This finding was

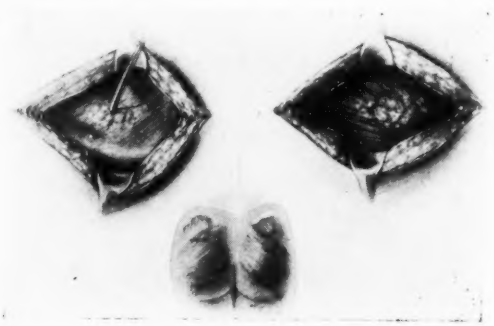

Fig. 3. — Incisions made for subfascial fat hernias.

verified by retrograde pyelograms. Because of the size of the stone, it was removed by open operation. The patient's recovery was uneventful, and he was relieved of his back pain.

Case 7. — In this case, routine roentgenograms showed nothing abnormal, and physical examination revealed no cause for the persistent backache of which the patient complained. Examination of the abdomen, however, revealed rebound tenderness which was elicited in the right lower quadrant. At operation a retrocecal appendix was removed, and afterward the patient's backache was completely relieved.

Summary

A discussion of the differential diagnosis of low back pain, based on a study of 281 consecutive cases, is presented (table 1). A large proportion of the patients in this series had painful trigger points or nodules in the back and were relieved by injections of anesthetic solutions. Eighty-six of these patients were subjected to operation for removal of herniations of subfascial fat. In 82, the symptoms were kept in good control by repeated injections of anesthetic solution, at intervals, and operation was deemed unnecessary. Thirty-six patients who had these painful nodules, in addition to chronic arthritis of the spine, obtained varying degrees of relief of pain following injections of anesthetic solutions.

Fig. 4.—Actual size of excised fat specimens.

Among other causes of low back pain in this series were: post-traumatic cyst pressing on the sciatic nerve, disrupted intervertebral disk, tuberculosis of the spine, fractured coccyx, incomplete fracture of the lumbar spine, spondylolisthesis, sacroiliac dislocation, retrocecal appendicitis and renal calculus.

Although the number of cases of painful nodules and subfascial fat hernias in this series is undoubtedly higher than it would be in other series because many patients are referred to me because of my special interest in this condition, the large number of such cases suggests that perhaps many cases of so-called undifferentiated low back pain belong in this group. When painful nodules are systematically looked for, they are found in increasing numbers; and any patient who has had persistent low back pain should be subjected to such an investigation. If such nodules are found, the relief obtained from anesthetic injections, and, in the more severe cases, from surgical removal of subfascial fat hernias, is striking. This treatment is, however, not a panacea for all types of backache, which, as the present report indicates, is traceable to many different causes.

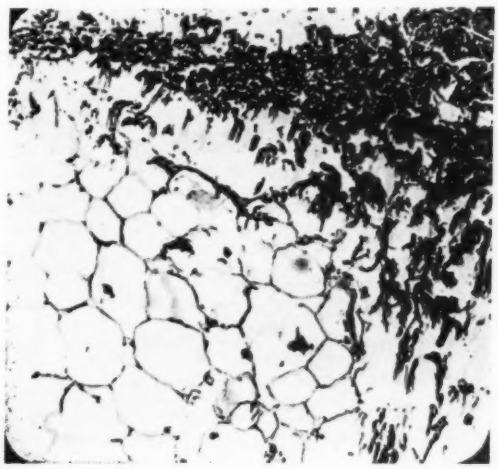

Fig. 5.—Microscopic section of excised herniated fat showing mild inflammatory process.

*Since this paper was presented, I have used intracaine for injection in a number of cases of subfascial fat herniations with excellent results.

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Discussion

Dr. Francis W. Glenn, Miami: I am pleased to have the privilege of discussing Dr. Herz's excellent paper. In addition to discussing the differential diagnosis of backache, he has shown an excellent series of cases in which he found a subfascial herniation of fat. He has called attention in slides to this peculiar type of fat which is arranged in a more or less definite pattern in the lower back and has shown that this type of fat is different from the usual subcutaneous fat in this area. His emphasis on the role of this fat mass in the causation of back pain, and the method of making the diagnosis and the treat-

ment are, I believe, a definite contribution in helping to solve one of the baffling problems of backache. This condition is undoubtedly common, but has escaped us.

About ten or twelve years ago, Steindler of Iowa, and later Badgley of Michigan, emphasized the use of novocain as a diagnostic aid and therapeutic measure in the treatment of certain types of backache, which probably were the result of these lesions. They attempted to explain the radiation of pain on a theoretic basis that it probably was through the sympathetics. Repeated injections would sometimes effect a cure, together with physiotherapy and active exercise. Most of us have used injections as a diagnostic measure and a threapeutic measure in the past, without realizing the pathologic state Dr. Herz has described.

Since receiving his paper, I have had a case in which there had been a previous laminectomy, with relief of most of the pain down the leg. A defect was shown on the myelogram, and the defect was found and removed. The patient still had a painful area just above the posterosuperior iliac spine, and a nodule was felt there; the pain radiating down the outer side of the thigh to the knee was relieved by novocain injection. She was operated upon again, and a typical herniation of fat was found about the level of the third or fourth lumbar vertebra; this was excised. She had several smaller herniations below at the level of the posterosuperior spine of the ilium. These were also removed and the fascia closed over. The fascia in this area was thin, and the globules of fat, as Dr. Herz described them, were rather large globules, held together by thin connective tissue. There was some evidence of inflammation in this mass, but I thought this was due to the diagnostic puncture done two weeks previously. The fascia was thin and somewhat friable in this case, and the large defect was difficult to close.

Dr. Herz emphasized the necessity for good roentgenograms in cases of back pain. I think they are extremely important. More and more emphasis should be placed on the necessity of having at least an anteroposterior and a lateral view of the spine. Oblique views and stereo views, plus spot films when indicated, are often necessary to rule out, definitely, bony or joint pathologic change. A single anteroposterior view, even though of excellent quality, does not rule out bony or joint pathologic conditions when it is realized that this film is made through the spinous processes and all the other structures of the anterior portion of the body, and does not give sufficient information. Many fractures, not greatly displaced or even evident at all in the first films, will be missed if the lateral view is not made.

Cases of hemangioma of the vertebral body seem to be on the increase, undoubtedly because of better roentgenograms, including spot films, showing the finer detail as responsible for this discovery. The importance of proper positioning is of course self evident.

Protruded intervertebral disks were first described in 1934 by Mixter and Barr in Boston. Since that time thousands of cases have been reported and many patients operated on with good and indifferent results, and sometimes with bad results. Protruded disks in industrial cases are always a headache. We have 1 case now in which there is a large defect between L4 and L5, L5 and S1, and a smaller one between L3 and L4. This man has one of the most striking defects that I have ever seen, and still his ankle jerks are active and equal, as well as the knee jerks. There are only vague sensory changes. Pain is in the right leg and not in the left, in spite of the bilateral defects. I found a mass just below and medial to the posterosuperior iliac spine, which was extremely tender and caused pain clear down to the foot. This was infiltrated with novocain, and when this mass was struck, he said the pain shot all the way down to the foot. The pain was relieved following injection, and he volunteered that instead of having pain there he had a numb feeling. This treatment was just given recently and, since this is an industrial case, surgery has been postponed. Incidentally, this patient shows a typical sciatic scoliosis, as seen in a ruptured disk.

Again, as Dr. Herz emphasized, the patient is a whole animal and has to be considered as such, and many preexisting problems which did not up to that time give pain, may be aggravated by injury, illness, fatigue or any other cause that may lower resistance. One of the difficult problems to evaluate is the industrial or liability case, in which injury has been superimposed on pre-existing arthritis. In some cases of this type, the best cure, of course, as we all know, has been a greenback poultice.

I want to thank Dr. Herz again for the privilege of discussing his excellent paper, and I believe that he has made a definite contribution in the solution of the problem of back pain.

DR. HERBERT W. VIRGIN, JR., Miami: The major question raised in Dr. Herz's paper is difficult to approach. The reason is that there is a great multiplicity of diagnoses available in the study of back cases. This great number is evident to anyone who has done any amount of back work. Dr. Herz's diagnosis of encysted fat pads as the major finding in painful backs in such a large percentage of cases seems to make back work look simple, and I think it is incumbent upon someone who does a great deal of back work to point out that it is really not quite so easy as he has made it appear.

Several years back I reported to a staff conference 2,750 back examinations in the previous twelve years of experience. I can honestly say that the finding of painful nodules as the prime cause of back pain in any one case was so negligible in its percentage that it dropped down to the bottom of the list as a diagnostic entity in this presentation.

There is no doubt that Dr. Herz is correct on one point. That is that injections of novocain will give relief and will give great relief in the cases in which painful nodules are actually the primary cause of back pain, but we have to stop and think that the pressure of the examiner's fingers over the area of normal tissue will give pain in a painful back. Then we add to this thought that pressure upon a globular mass of fat exactly over an underlying tender area which ordinarily would respond with pain to the pressure of an examining finger will produce more pain because the concentration of pressure over a globular mass will give a more concentrated and smaller area of pressure. The idea is that in such cases we will get painful responses anyway whether the fat is there or whether it is not there, and it is not the mass of fat that causes pain in these cases. It is almost impossible to differentiate between cases of this sort and cases in which the mass of fat itself becomes the primary painful mechanism.

There have been only a few instances in my own experience in which masses of encysted fat themselves have caused back pain. I am glad that Dr. Herz has had such exceedingly good results with his cases, and it is wise for him to have brought this factor in the production of back pain to our attention, and to have given us such good technic to follow in the application of novocain. It is just as wise to remember that many causes of back pain may exist in the presence of fat globules, and these should all be ruled out by accurate differential diagnosis before it is determined that the globules themselves are the cause of pain.

DR. HERZ, concluding: Dr. Virgin's point is well taken, but what I do when I first examine the patient is to ask the patient to put his finger on the point of pain, and the patient is usually able to find it.

There is one point that I should like to emphasize and that is that I do not use novocain. Procaine has come into general use, but in many people there has developed an allergy to procaine. It is perfectly safe to inject metycaine solution, 1½ per cent, which is used as an anesthetic, provided you do not inject it under pressure.

In closing, I should like to point out that in the past we have always been looking for the cause of back pain in the bone, and while in many cases this is the correct place, there are many cases in which one or more injections into a mass of fat will produce relief.

Parathion Poisoning

John W. Williams, M.D.
LAKELAND

The last several months have witnessed many cases of parathion poisoning in the state of Florida, with 1 death. While this insecticide, o, o-diethyl o-p-nitrophenyl thiophosphate, is of economic importance for crop protection, measures necessary for protection of man at times have not been taken, have not been understood, or have been neglected. To date there have been at least 6 deaths from parathion poisoning, and many cases of varying degree of severity with recovery.

As little as 0.3 Gm. daily exposure has been estimated as dangerous to man, and as little as 12 to 20 mg. may be considered as a quantity apt to prove fatal.[1]

Parathion is a cholinesterase inhibitor through which action acetylcholine accumulates at the synapses, producing the symptoms. It affects the muscles and glands, producing a muscarinic effect manifested in cases studied by gastrointestinal, respiratory, ocular and dermal symptomatology. It also has a nicotinic effect on the heart, blood vessels and muscles and a paralyzing action which may occur in the presence of high concentrations.

Cholinesterase inhibitors and the parasympathomimetic drugs produce a common symptom complex. To this class belong physostigmine and prostigmine. Parathion and the other phosphate esters, however, act in relatively minute amounts, possibly only 2 to 3 mg. a day for three days in some instances resulting in almost complete destruction of plasma and red blood cell cholinesterase. . As a result of destruction of cholinesterase, acetylcholine is not destroyed. Drugs in its class are muscarine, pilocarpine, mecholyl and doryl.

Normally red blood cells, plasma, and tissue enzymes hydrolyze acetylcholine. The plasma cholinesterase is inactivated by the organic phosphate ester and may approach zero activity and that of the red blood cells 10 per cent activity before symptoms appear. Symptoms have disappeared when the red blood cell activity has returned to 10 per cent.[2]

A person who has repeated exposures to parathion may become unusually susceptible since his cholinesterase is low and relatively small quantities of parathion are necessary to reduce it to the danger zone. Final recovery of cholinesterase takes about three weeks for plasma and three months for red blood cells and probably tissue. The recovery of plasma appears to depend on liver function and of red blood cells on their formation.

Symptomatology

Parathion is described as having both a muscarinic and a nicotinic effect. A review of the symptoms in 30 cases indicates that a clear-cut picture of these effects is sometimes difficult to obtain. This difficulty probably arises because of rate of absorption, route of absorption, concentration of parathion, existence of peculiarities in the individual and sensitization. Table 1 shows the number of cases in which the various symptoms were present, arranged in accordance with the area affected.

Diagnosis

The diagnosis of the average case of parathion poisoning should not be difficult. A history of exposure is of prime importance. Heat, humidity, length of time of exposure, concentration exposed to, route through which absorption takes place and age of the patient are of importance. Absorption is especially good and effects especially pronounced when exposure occurs on hot humid days. Vulnerability through the respiratory tract is four times as great as through the skin. Exposure over a long period of time to small quantities may mean that the cholinesterase level in the blood is low and that small subsequent exposures may reduce it to a level where symptoms of poisoning will occur. With age there is reduction in physiologic reserve and regenerative processes which may make the older person more sensitive to poisoning. Anemia and disease of the liver may interfere with cholinesterase production and regeneration, and continued exposure may result in exhaustion of the

mechanism. Persons vary with reference to sensitivity to phosphate esters, and those especially sensitive in this respect should not be allowed to work with the substances.

The different types of effects of parathion are amply illustrated in Table 1.

Table 1

Signs and Symptoms	Number of Cases
Chest and respiration	
Constriction chest pain on exertion	1
Edema of lungs and bronchi	7
Labored breathing	5
Pain in chest and arms	1
Ears	
Ringing	2
Eyes	
Blurred vision	4
Constricted pupils	14
Glassy eyes	1
Gastrointestinal tract	
Abdominal cramps	16
Desire to defecate	1
Diarrhea	1
Involuntary defecation (1 also micturation)	5
Nausea	17
Salivation	1
Vomiting	14
Muscles and tendons	
Heavy feeling muscles in arms and legs	1
Loss of tendon reflexes	2
Muscle incoordination	1
Spasm of muscles	1
Stiff and aching muscles	1
Twitchings, local as tongue and eyelids	3
Twitchings, muscles in general	6
Nervous system	
Anxiety and apprehension	5
Confusion	1
Convulsions	4
Dizziness	11
Grogginess	2
Headache	9
Mental sluggishness	1
Paresthesias	1
Slurred speech	3
Stupor, coma	13
Skin	
Cold and chilly sensation	6
Sweating	6
Warm	1
General	
Collapse at work	1
Cyanosis	8
Objects heavy to lift	1
Tired feeling	1
Tremulous	1
Weakness	5

Gastrointestinal symptoms are most frequent, but appear to carry the least serious import. Edema of the lungs, severe effects on muscular and vascular systems and severe symptoms of the central nervous system carry the most serious import. Of the 6 deaths, edema of the lungs was the most constant finding at autopsy.

From the data at hand it appears that death might be expected to occur within twenty-four hours after the beginning of symptoms. The shortest time was eight hours. The time for recovery may range from four hours to four weeks.

Estimation of the cholinesterase activity of the plasma and blood is of prime importance in the diagnosis. It is most easily understood when recorded as percentage activity. Depression of plasma esterase by 75 per cent or more, or of red blood cell esterase by 40 per cent is good evidence of recent absorption of a cholinesterase inhibitor such as parathion.[3]

Precautions

Pamphlets on parathion poisoning are distributed by the American Cyanamid Company. Poor water solubility, good lipoid solubility and slow hydrolysis account for its properties. Does a sufficient amount remain on fruits and vegetables after spraying to cause poisoning? As yet there are no recorded cases.[4]

Cholinesterase shows decrease with anemia, low plasma protein and exposure to an inhibitor. Individual values are comparatively constant (normal range 75 to 125 per cent). Depression of plasma cholinesterase of 20 per cent suggest recent exposure. A red cell cholinesterase reduced to 60 per cent of normal (or symptoms at a somewhat higher level) warrants immediate withdrawal from exposure until regeneration. Plasma cholinesterase is an index of exposure but not for withdrawal.

The anticoagulant for blood samples is heparin. Blood from a vein is preferable, but ear or finger tip blood can be used providing the capillary tubing first has been rinsed with heparin.

Treatment

Removal of parathion from the skin, stomach and intestinal tract is done in prescribed fashion. Atropine is given as a physiologic antidote to the muscarinic effects, namely, gastrointestinal, respiratory, visual, sweating and salivation. Magnesium sulfate is used as a peripheral muscular depressant guarding against respiratory failure by use of calcium gluconate. Postural drainage is instituted for drainage of secretions collecting in the mouth and respiratory tract, and aspiration is done when necessary. Oxygen inhalations are routinely employed for cyanosis and respiratory distress. Artifical respiration may be necessary when the case assumes aspects resembling bulbar poliomyelitis. When the cholinesterase proves unduly low, transfusions of fresh blood are recommended. Other symptoms are combated in accordance with routine procedures.

Conclusion

Parathion probably will have increased use because of its economic value as a spray. The public and workers will have to be educated more widely as to its dangers, and strict discipline will have to be instituted to insure that all the necessary precautions are taken to prevent poisoning.

Parathion is toxic only in so far as it destroys cholinesterase, which in turn destroys acetylcholine. When the acetylcholine reaches dangerous concentrations, symptoms occur.

The symptomatology is varied and unpredictable. Prompt treatment is necessary.

Cholinesterase studies should be made in all cases in which poisoning is suspected, and periodically on workers with the substance. Other cholinesterase inhibitors will increase susceptibility to parathion poisoning.

The respiratory is cited as the most dangerous route of absorption.

I wish to thank the following for their cooperation: Dr. David Grob of the Johns Hopkins Hospital, Drs. D. O. Hamblin and J. F. Marchand of the American Cyanamid Company, Dr. J. B. Redd of Florida Southern College, Dr. J. T. Griffiths and C. R. Sterne of the Citrus Experiment Station, Drs. J. W. Annis and Henry Fuller of Lakeland, and Drs. R. D. Fields, N. J. Griffith and W. T. Steele of Winter Haven.

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P. O. Drawer 873.

Two Medicolegal Case Reports: Cerebromalacia Following Puncture Wound of Neck with Anomaly of Circle of Willis; Pulmonary Air Embolus from Attempted Self Abortion

Thomas W. Hutson, Jr., M.D.
MIAMI

With the recent growth of Dade County from 42,753 in 1920 to 550,000 in 1950, legal autopsies are coming into importance. The department of pathology at Jackson Memorial Hospital averages 600 to 700 autopsies a year. Of these, 34 per cent are legal autopsies. With this fact in mind, 2 cases of interest not only to legal medicine but also to the general practitioner are presented.

Cerebromalacia Following Puncture Wound of Neck, Anomaly of Circle of Willis

Case 1.—H. C., a 60 year old white man, was admitted to Jackson Memorial Hospital in profound shock due to external loss of blood. He had been stabbed in the neck with a pitchfork during an altercation thirty minutes prior to admission.

Physical examination revealed a well developed, well nourished man of stated age in extremis. His clothes and the left side of his face were covered with freshly clotted blood. The blood pressure on admission was 80 systolic and 40 diastolic. The pulse rate was 100 and regular. There were two puncture wounds on the left side of the neck, one at the left auditory meatus and the other slightly anterior to the middle third of the sternomastoid muscle. These puncture wounds were 5 mm. in diameter with a trickle of blood oozing from them. There was pronounced distention of the left side of the neck, and the trachea was deviated 1 inch to the right of the midline. The reflexes were normal; however, there was no movement of the right extremities. The left extremities moved freely. Only with extreme stimulation was there movement of the right limbs. The pupils were equal and responded to light.

Shock therapy was instituted, and the blood pressure rose to 160 systolic and 90 diastolic. The patient remained comatose, and the wounds began to bleed freely and profusely. The bleeding could be controlled by local pressure on the carotid vessels.

Roentgen examination revealed no foreign body in the region of the neck. The red blood cell count was 3,900,000; the number of white blood cells was normal. Urinalysis gave negative results.

On surgical exploration of the left side of the neck, a large hematoma was evacuated, and the carotid sheath was exposed. Inspection of the left common, internal and external carotids revealed no perforations. A small branch of the left external jugular vein was perforated. This was ligated, and the bleeding ceased. The wound was loosely closed, and a rubber drain was left in the fascial spaces. The trachea had now returned to normal position. Blood pressure at this time was 145 systolic and 80 diastolic.

The patient remained in coma. There was movement of the left extremities, but none of the right extremities. The reflexes remained normal. The eyes were rotated to the left and fixed in this position. Cheyne-Stokes respiration developed. There was a gradual rise in temperature to 106 F. on the second day of admission, at which time he expired.

Autopsy.—Postmortem examination revealed the body of a 60 year old white man with a surgical dressing over the left side of the neck. A small perforation 3 to 5 mm. in diameter was noted in the inferior portion of the left auditory canal.

From the Department of Pathology; Dr. Philipp R. Rezek, Director, Jackson Memorial Hospital, Miami.

The left side of the neck was markedly swollen. The overlying skin presented a bluish black discoloration. The swelling extended from the left mastoid prominence down to the clavicle and from the midline to the left posterolateral aspect of the neck. There was a T-shaped surgical incision on the left side of the neck with a rubber drain protruding through the incision. The cross of the T, 5 cm. long, extended over the middle portion of the left mandible. The erect portion of the T, 10 cm. long, extended from the mandible downward over the region along the carotid sheath. The incision had been carried through a 3 to 5 mm. perforation over the carotid sheath.

On dissection of the left side of the neck, the muscles and fascial planes contained a large amount of extravasated blood causing great distention of all structures. There was no definite localized clot. The trachea and larynx were displaced to the right of the midline. The common carotid artery was isolated and opened. There were no perforations. The internal and external carotids were normal. The internal jugular vein was intact. In the external jugular system, a medium-sized branch, that had been transected, was ligated.

The scalp, skull and dura appeared normal. Upon removal of the dura, a left subarachnoid hemorrhage, 2 mm. thick, was seen. The brain weighed 1,500 Gm. The entire left cerebral hemisphere had undergone pronounced malacia. Inspection of the circle of Willis revealed absence of the anterior communicating branch and a threadlike left posterior communicans. The cut surface of the left anterior and middle cerebral hemispheres revealed complete malacia. The posterior portion was somewhat softer than the right cerebral hemisphere. There were hemorrhagic areas throughout the entire left cerebral hemisphere.

The mediastinum contained some dark red blood infiltrating its upper structures.

The heart showed a moderate left ventricular hypertrophy and weighed 400 Gm. The coronary vessels contained several small, raised, yellowish, calcified plaques in the intima.

The kidneys had a fine granular atrophy of the cortex. The remaining organs were grossly normal.

Gross Diagnosis: Pronounced malacia left cerebral hemisphere; left subarachnoid hemorrhage; absent anterior communicating branch of the circle of Willis; threadlike left posterior communicans of the circle of Willis; hematoma, left side of the neck; compression of the great vessels of the left side of the neck with displacement of the trachea and larynx to the right; and surgical incision, left side of the neck.

The incidence of anomalies of the circle of Willis is more frequent than the normal. In 200 cases at autopsy, Fetterman and Moran[1] found less than 50 per cent of the normal anatomic circles of Willis. Of these 200 cases, 23 per cent showed anomalies of the posterior communicating branches. Of these 46, or 23 per cent, there were 20 examples of threadlike posterior communicans of one or the other posterior communicans. There were 16 cases of bilateral threadlike posterior communicans. Absence of one posterior communicans was encountered six times. There were 3 cases of absence of one posterior communicans with threadlike formation of the other. There was 1 case of absence of both posterior communicans. In no case was an absent anterior communicans encountered. The incidence of anomalies was more frequent in women. In men, 159 cases, 32 or 20.1 per cent showed anomalies; in women, 41 cases, 14 or 34.1 per cent showed anomalies. Fawcett and Blackford,[2] in 700 cases, reported the same sex incidence as Fetterman and Moran.[1] They also corroborated the latter's report on the incidence of percentage of anomalies. They reported that threadlike formation of the left posterior communicans is the most frequent anomaly of the circle of Willis, occurring 86 times, or 17.0 per cent, in 510 cases. Absence of the anterior communicans was reported in 1 case of a series of 1,300 autopsies.

The anatomy of the circle of Willis is too well known to be discussed here. The collateral circulation of this circle following ligation of the common carotid artery, however, should be discussed. After ligation of the common carotid artery, the circulation is carried on through: (1) the opposite internal carotid; (2) the circle of Willis; (3) the angular with the ophthalmic; and (4) the internal carotid on the side ligated, by means of retrograde flow down the external carotid and past the bifurcation. This reversal results from the following anastomoses: (a) the inferior with the superior thyroid; (b) the deep cervical branch of the costocervical trunk with the descending branches of the occipital and vertebral; (c) the superior thyroid, the lingual, the facial, occipital and temporal, with the corresponding arteries of the opposite side. With this anatomy in mind, it is obvious that ligation of the internal carotid is more dangerous than ligation of the common carotid.

Dorrance[3] stated that a moderate percentage of cerebral complications following carotid ligation is due to reduced blood supply in which anomalies of the circle of Willis are present. Zehnder[4] reported a case of a missing anterior cerebral artery found on arteriogram.

In the present case absence of the anterior communicans and threadlike formation of the left posterior communicans of the circle of Willis have been described; ligation of the great vessels was affected by pressure from the massive infiltration of blood into the fascial planes and muscles of the left side of the neck. This pressure was so great it displaced the trachea and larynx to the right of the midline. It was exerted not only on the left common carotid, but also on the left internal and external carotid, thus cutting off one of the largest collateral circulations. The absence of the anterior communicans and threadlike left posterior communicans left a large portion of the left cerebral hemisphere totally occluded of blood supply, resulting in anemic infarction and great malacia. This condition was observed clinically and at autopsy.

With regard to the importance of autopsy in such a case as this, the establishment of a pre-existing pathologic change cannot be overemphasized, as stressed by Rezek.[5] Had the autopsy not revealed a pre-existing pathologic condition, as described, the defendant would have been indicted for first degree murder.

The frequency of anomalies of the circle of Willis and its importance to ligation of the carotid vessels in traumatic surgery and neurosurgery should not be overlooked or disregarded.

Pulmonary Air Embolus from Attempted Self Abortion

Case 2. — O. W., a 24 year old white woman, was admitted to Jackson Memorial Hospital on Nov. 26, 1949, dead on arrival. A history was elicited from relatives and close friends of the deceased.

This unmarried woman had her last menstrual period on July 23, 1949. There was no previous history of pregnancy or missed menses. On November 26, the deceased entered the lavatory at home and locked herself in. About ten minutes thereafter her father heard her scream and fall to the floor. He forced open the lavatory door and found her lying on the floor, gasping for breath, foaming at the mouth and clad only in a brassiere and skirt. She expired within a matter of two or three minutes. Homicide investigation revealed no evidence of trauma or foul play. The investigators noted a large douche syringe, with a small tip, filled partially with soapy water, lying on top of the toilet.

AUTOPSY. — External examination revealed the body of a well developed, well nourished white woman of stated age. There was a profound cyanosis of the nail beds, mucous membranes and conjunctiva. There was a large amount of white frothy and clear serous fluid present in the nose and mouth. The abdomen was slightly protuberant, and the uterus was palpated 5 fingerbreadths above the symphysis pubis.

Thoracic examination disclosed about 100 cc. of clear straw-colored fluid in both pleural spaces. There were many petechial hemorrhages over all the visceral pleura of the right and left lung. On the cut surface of the lungs there was a great increase in frothy blood-tinged material exuding from the parenchyma. There was great congestion of the vascular tree. The tracheobronchial tree contained a large amount of foamy, frothy material. The right lung weighed 750 Gm. The left lung weighed 500 Gm.

On opening of the pulmonary artery, a red frothy bubbly content was noted. The right atrium and ventricle contained the same type of material. Small gas bubbles could be seen through the inferior caval wall. On opening of the inferior vena cava, the bubbles were not mixed into a frothy substance as in the right side of the heart and pulmonary artery. There was no discernible air in the left atrium or ventricle.

The uterus was enlarged 5 fingerbreadths above the symphysis and was symmetric. It had a soft, boggy, crepitant feel on palpation. The myometrium was hypertrophied, and a fetus and placenta were present in the uterine cavity. The cavity itself appeared to be larger than the contained products of conception. The fetus measured 16 cm. from crown to heel. The placenta was 12 cm. in diameter, was implanted on the left anterolateral wall and was separated from the wall along its inferior border.

Diagnosis: Pulmonary air embolus.

Forbes[6] stated that when any large vessel under less than atmospheric pressure is opened and cannot collapse owing to rigidity of its walls or fixation of its wall, the entry of air is possible and its mechanism easily understood.

Under these conditions air embolism may result from (1) operations or lacerations of any great venous vessels, particularly in the neck and groin; (2) severance of dural sinuses during operation on the skull; (3) air entering the uterine sinuses during labor, following delivery and up to twelve days postpartum, and (4) during thyroidectomy.

When air is under pressure, air embolism may occur during (1) antral lavage, (2) distention of the bladder or urethra with air, (3) ureterotubal insufflation, (4) perirenal insufflation, (5) pneumoperitoneum, (6) pneumothorax, and (7) administration of air during intravenous administration. Vaginal douching during pregnancy and attempts at self abortion by douche syringe may also cause air embolism.

The mechanism of air embolism is not fully understood. Forbes[6] concluded that the effects depend on whether the pulmonic or systemic circulation is involved. In the former case, the air collects in the right auricle and ventricle, and air emboli are impacted in the pulmonary arterioles. If the volume of air is large and it enters the circulation quickly, death takes place rapidly. If the volume of air is smaller or its entry slower and life is prolonged, the air blocking the pulmonary arterioles is absorbed partially. The remainder may escape through the capillaries and veins, thus finding its way to the left side of the heart and into the systemic circulation, to produce cerebral and coronary infarctions.

Teare[7] reported a case of an 18 year old white woman who used a soap solution to abort herself at four months' gestation, with resulting pulmonary air embolus and sudden death.

Killinger and Collins[8] reported a case of pulmonary air embolus with autopsy in a 40 year old white woman pregnant seven months. Air in a douche bag with a closed system and the nozzle inserted into the cervix, after which pressure was applied to the douche bag, caused pulmonary air embolism and sudden death.

Reynolds and Cutler[9] in 1934 reported a case of air embolism following attempted abortion with a douche syringe. Subsequently they collected a series of 49 cases of air embolism from attempted abortion.

Deadman[10] analyzed 4 cases of pulmonary air embolism resulting from attempted abortion. Several different solutions were used; however, the air

present in the syringes, due to poor precaution, was the cause of death.

Breyfogle[11] reported a case of pulmonary air embolus resulting from vaginal powder insufflation in an eight months pregnant Negro woman.

Vance[12] reviewed a case in which lysol was injected into the uterus as an abortifacient, with resulting pulmonary oil embolism, lysol poisoning and death.

Leditznig[13] reported a case of fatal pulmonary air embolism following attempted abortion.

Decoulx and Bedrine[14] described an unusual case of pulmonary air embolism following intrauterine injection of soap suds. An emergency hysterectomy was performed, and the patient recovered.

Finn,[15] writing on the occurrance of air embolism in gynecology and obstetrics, reported a case of air embolism following uterotubal air insufflation.

In this case the cause of death was evidenced by the admixture of air with the blood in the right auricle, ventricle and pulmonary artery. The free gas bubbles were also noted in the inferior vena cava. The cyanosis, separated placenta and other findings at autopsy substantiate the diagnosis of pulmonary air embolism.

The importance of air embolism occurring during pregnancy should be kept in mind. Vaginal douching during pregnancy should be done only with extremely low pressure and care should be exercised to remove air from the douche system. Forbes[6] reported a case of fatal air embolism resulting from vaginal douching in which the woman was unaware of being pregnant. He also stated that air embolism may result during labor, after delivery and up to twelve days afterward. Stroh and Olinger[16] reported a case in which pulmonary air embolus occurred during knee-chest exercise on the seventh postpartum day.

The amount of air necessary to cause death is a point of great discussion. No author has mentioned the exact or average amount needed. Coles, Richardson and Hall[17] maintained that 480 cc. of air is required for fatality, while Simpson[18] claimed that even 10 to 15 cc. of air may cause death.

Summary

A case is presented with two anomalies of the circle of Willis, (1) absent anterior communicans and (2) threadlike left posterior communicans, in which death was due to pressure ligation on the common, external and internal carotid arteries by hemorrhage following a stab wound of the neck.

The literature is reviewed covering the incidence and types of anomalies of the circle of Willis.

Case 1 represents one of the extremely rare reports of absent anterior communicans in the literature that was available.

The collateral circulation of the brain is discussed, and the contraindication to ligation of the internal carotid is emphasized.

The importance of medicolegal autopsies is mentioned.

A case of fatal pulmonary air embolism following attempted self abortion with soap suds, during the fourth month of pregnancy, is presented.

The mechanism and cause of pulmonary, cerebral and coronary air embolism, including the corresponding literature, are reviewed.

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ABSTRACTS OF MEDICAL ARTICLES

OVERPROTECTION: WILL IT MEAN THE END OF CIVILIZATION AS WE KNOW IT? By James L. Anderson, M.D. South M. J. 43:20-23 (Jan.) 1950.

In his chairman's address before the Section on Neurology and Psychiatry of the Southern Medical Association last November, Dr. Anderson deplored dangerous trends of today. Finding the nation with moral and spiritual resources not at all in keeping with the material advances and with an authoritarian tradition discouraging free thinking and analysis, he was not surprised that certain pathogenic micro-organisms have penetrated the national body. Two of the most virulent of these organisms he described: Pathogen 1. A person needs something. Therefore we must give it to him. Pathogen 2. One person has more than another. Therefore, that person should have it taken from him because of the needs of a more inadequate group.

In conclusion, this author observed: "The only constructive idea I can advance is that we should revert to some extent at least to the primitive and put a little trust in ourselves, and not in the beneficence of a bankrupt government. We should assume individual responsibility for our inadequacies and try to compensate for them by attaining higher and higher levels of productivity and service."

PRESACRAL ENTEROGENOUS CYST. By C. Larimore Perry, M.D., and James W. Merritt, Jr., M.D. Ann. Surg. 129:881-889 (June) 1949.

A case of enterogenous cyst located in the presacral area is described, and a review of the 10 cases of histologically proved enterogenous cyst reported in the literature as occurring below the peritoneal reflexion is presented. The three theories advanced to explain this type of cyst are briefly outlined, and the pathology is discussed. These authors join the other authors in advising removal and observe that removal of the cyst usually can be accomplished by the removal of the coccyx in a posterior approach.

RECURRENT SMALL INTESTINAL INTUSSUSCEPTION IN CHILDREN. By M. D. Teitelbaum, M.D., and Nathan Arenson, M.D. Am. J. Roentgenol. 63:80-88 (Jan.) 1950.

Five cases of intussusception of the small intestine are reported, and roentgenograms relating to 4 are reproduced. These 4 cases represent a type occasionally observed by pathologists, rarely by surgeons and, to the authors' knowledge, not hitherto demonstrated on roentgenograms.

The authors concluded that this anomaly occurs more frequently in young children than is commonly believed, that it is presumably a manifestation of neuromuscular dysfunction and, in some instances, may be an allergic response; that the intussusception, transient and recurrent in character and usually involving multiple segments of the small intestine, produces intermittent abdominal pain with nausea and sometimes vomiting, and that the symptoms may be present for months or years. Although single attacks may be severe, there is no strangulation or obstruction, they noted; no tumor masses can be felt, and there is no bleeding from the bowel.

THE PUBLIC HEALTH LABORATORY DIAGNOSIS OF ENTERIC INFECTIONS. By Mildred M. Galton, Albert V. Hardy, and Roland B. Mitchell. Am. J. Trop. Med. 30:77-90 (Jan.) 1950.

A method for the isolation and identification of Shigella and Salmonella from fecal specimens is described. For convenience in performance the procedure is set up under five main divisions. The first, planting, consists of direct inoculation of the specimen as received, to selective plating media and an enrichment broth. The second and third, screening and presumptive serology, involve the inoculation of differential triple sugar medium, and rapid biochemical tests followed by slide agglutinations with various polyvalent antiserums. The fourth step is biochemical confirmation and the fifth serologic identification. The authors observed that the simple screening and presumptive serologic tests adopted reduce to a minimum the number of organisms requiring further biochemical and serologic study for complete identification.

COMPLICATIONS OF ANTICOAGULANT THERAPY. By George D. Lilly, M.D., and Robert M. Lee, M.D. Surgery 26:957-967 (Dec.) 1949.

Ten cases are described in which anticoagulant therapy was used. In 5, serious postoperative complications ensued, and the remaining 5 terminated fatally. Study of this series led the authors to conclude that there are no reliable laboratory procedures for the estimation of prothrombin levels and that Dicumarol is a hazardous therapeutic agent at best since its use in postoperative treatment may cause sudden, severe and even fatal hemorrhage, even when carefully controlled by experts.

In their opinion there is no justification for the employment of anticoagulant therapy in cases of phlebothrombosis and thrombophlebitis limited to the lower extremity below the groin, because proper vein interruption is a more certain, much safer, quicker, and much less expensive method for the control of this condition. Rather than the prophylactic use of anticoagulants, fraught as it is with hazards, they favor correct bed posture and properly supervised exercises to accomplish the same prophylactic results safely and economically.

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Unhealthy Britain

There have been many reports from Britain during the past few years, all of which seem to point in the same general direction. Conclusions of the five man A. M. A. Committee to Study Medical Care in England make it clear that the tremendously expensive experiment carried out under the National Health Act has degraded the practice of medicine and failed to improve the health of the British people.

Some analysts have pointed out that in Britain today there is no question about the warm reaction of the man in the street toward the service. "On balance, he reasons, things are much better than before July 1948. As long as Nye Bevan can go on raising taxes for it, the National Health Service will be a boon to him, the missus, and the kids."

Dr. Marion F. Beard, Louisville hematologist who recently returned from England after addressing the International Society of Hematologists at Cambridge University, suggested to the press that Britain's national health scheme be left out of arguments about similar legislation for this country. Said Dr. Beard: "Medical needs of England cannot be compared with those in this country. . . . Ability to pay for medical care is much lower in England than in this country. . . . Also, before England's present program there were no hospitals comparable to our city hospitals or our Veterans Administration hospitals. Charity patients in England were treated in private hospitals if authorities approved admittance. . . ."

Dr. Beard did not tell us: that even if all the dental schools were doubled, it would take twenty-five years to provide Great Britain with enough dentists; that five prescriptions have been issued in Lanarkshire for every person in the county since the Health Service started; and that a recent newspaper headline proclaimed, "10,000 Queue for Hospital Beds."

We shall follow Dr. Beard's suggestion for the present and leave Britain's national health plan out of our remarks. Let us ponder these British items which come from unimpeachable sources:

Almost everything Britain has nationalized has incurred losses, requiring heavier taxes.

Nationalized "hostels" lost over $25,000,000 last year.

Automobiles are unobtainable, even after ordering for several years.

Britain is making it difficult for those who already own automobiles to operate them for any appreciable length of time.

There is business ineptitude. Clerks in the shops seem indifferent and supercilious and are surprisingly inefficient.

So reckless have the British people become that last year the amount of money spent on sheer gambling — horse racing, football "pools," dog races, and the like — amounted to $40 for every man, woman and child in the nation. Britons spend more on gambling than on clothes.

Omitting the health angles from our remarks entirely, we still do not hesitate to conclude that Great Britain is in an unhealthy state. She has rendered us service in that she has shown us the pitfalls which we should do well to avoid. Those who would have us change from our American way of life do us a great disservice.

Surgical Sonatas

"Music hath charms to soothe. . ." has its practical application today as an aid to anesthesia in operations. The use of music to soothe the surgical patient is styled "surgical sonatas" by the staffs of the University of Chicago hospitals and clinics, where it is no longer an innovation.

Beethoven or Brahms? Berlin or Bing? The anesthesiologist usually inquires the night before the operation regarding the patient's preference for classical, semiclassical or popular selections, both before and during the operation. Children have their choice, too, and may receive music from Peter and the Wolf, Cinderella, Pinnochio, or scores of other nursery favorites.

As the patient is prepared for the operation, the music begins coming in softly over the wall speaker and later over the headphones. Fitting tiny personal earphones to a patient on the operating table is now part of the standard routine of anesthesiologists working under Dr. Hulberta M. Livingstone, head of the anesthesia department. The musical program is the joint secret of the anesthesiologist and the patient, for others in the room do not hear it. The anesthesiologist monitors the program with earphones and attaches the headset to the patient.

The whole idea developed from a chance remark made to Dr. Livingstone by a young war veteran audioengineer, Joel Willard, who thought soft music would be diverting to a restless patient and would drown out the sounds of the clicking instruments and the low conversation of the surgeons. With a research grant from the Navy, a trial installation was made in 1947. The music at once proved its worth as no novelty or frill but "a fundamental addition to the science of pain deadening." It has come to be regarded as indispensable in appendectomies, vagotomies and the other operations in which general anesthesia is not advisable. The extent of its application was emphasized recently when it was classed as standard equipment for all six operating rooms of the new Nathan Goldblatt Memorial Hospital.

The music comes from a master control room with three magnetic tape recorders. Each has its special type of music and plays continuously for hours without repeating. It would seem that surgical sonatas might well become widely popularized as a new vogue in hospital fashions.

How Old Is Old?

Faced with the unanswerable question, "How old is old?" the National Conference on Aging, held in Washington on August 13-15, nevertheless wrestled with some success with the problems associated with the increasing proportion of older persons in our population. Among the 808 delegates representing diverse professional fields and public groups, one opinion prevailing over all others appeared to be that to define age in term of years is meaningless, that retirement plans based on chronology are wasteful, blundering, full of long range dangers to the nation, and even capable of wrecking the nation's economy.

"Old age is always five years older than you yourself are," was one delegate's opinion. Another might have said twenty years older. It was Victor Hugo who aptly described 40 as the old age of youth and 50 as the youth of old age. So be age what it may, there was wide agreement among the delegates that instead of retirement at a fixed age, retirement plans must be tied to disability. But, what is disability?

This conference, called, organized and conducted by staff members of the Federal Security Agency, comprised 28 committees, grouped into nine sections, dealing with a wide range of subjects pertaining to the needs of older persons. The objective of this "national exploratory forum" was to set in motion an immense project of research to find the answers to the many unanswered questions.

The Section on Health Maintenance and Rehabilitation emphasized in its preliminary subcommittee reports: the need for study of characteristics of well adjusted older persons—the epidemiology of health as well as that of disease; greater accuracy in lay health education; more emphasis on geriatrics in medical education; caution in promoting multiple screening programs, still in the experimental stage; development of more facilities for providing services at home, now available only in hospitals or clinics; provision for senile patients with mild psychosis; formulation of basic standards for nursing homes; establishment of geriatric guidance centers; development of com-

munity facilities for group activity and recreation of older persons; and leadership of physicians and medical societies in developing integration of community agencies to provide a balanced program to meet the health needs of elderly persons.

The consensus of the conference was, pending its formal report, that everything is tied up with everything else; that pensions are actually incidental, not the whole thing; that medical research is as important as the probing of economics; that solutions cannot be hurried; and that attitudes must be remade, laws or force having no effect upon them. The published report will soon be available. If the conference is to have constructive and permanent value, this report must reflect adequately and fairly, without slanting, the deliberations of the committees, most of whose members were not employed by the federal government but represented the many and varied phases of American democratic life.

Voluntary Health Agencies Distinctly American

The American people are enthusiastic supporters of a just cause. They spend their money and they spend their time, hours upon hours of it, promoting, developing and strengthening voluntary agencies with desirable goals. "That is why," writes Dr. George F. Lull in a recent number of The Crippled Child, "300,000 outstanding men and women voluntarily serve on the boards and committees of 20,000 voluntary health agencies. That is why the American public subscribes an annual $100,000,000 in gifts ranging from pennies to fortunes to permit these agencies to do their work. That is why millions of volunteers roll up their sleeves to plan and execute, and collect the money neded to execute, the hundreds of health programs directed toward health education, research in disease prevention and control and assistance to the unfortunate victims of disease."

The remarkable advances in the war against specific diseases that have been made possible by zealous workers serving their fellow Americans through voluntary organizations make an imposing contribution. These voluntary health agencies are distinctly American institutions.

Dr. Lull regards the 20,000 voluntary agencies in the United States as the world's most effective means of promoting and expressing the human impulse to help others. In describing this American phenomenon, he made this wise observation: "Health agencies of this character are the product of a philosophy of living and a social and economic condition. They could not exist, let alone grow to their present level of service, under a socialistic or totalitarian philosophy of government."

YOUR BLUE SHIELD

Medical Interpretation of Blue Shield Contract

The preservation of the physician-patient relationship is dependent upon the confidence of the public in the voluntary plans. The voluntary plans feel that there is a possibility of this confidence being jeopardized and feel that it is their duty to safeguard this confidence by more clearly defining to the physicians, the provisions of the Blue Cross-Blue Shield contracts.

Because the plans have not made clear to the physician the provisions of the contracts, many patients feel that in many instances denial of liability by the Plans is unjustified and have frequently suggested that payment was assured by the physician at the time of consultation. In connection with solely diagnostic admissions and services in connection with conditions pre-existing the effective date of the contract, the public attitude brought about by the rejection of such cases reflects not only upon the plan, but also upon the physician.

Diagnostic Admissions

The first type of service mentioned above deals with hospital admissions involving only diagnostic procedures which do not include treatment or care by the physician for sickness, disease or injury. It is not the intent of the plans to provide benefits when the admission is a means of convenience for obtaining services without cost. If, however, the patient is acutely ill or his health is in danger, the diagnosis and treatment of such a condition would be deemed justifiable by the Plans. If the physician feels that a sickness does exist and that hospital facilities and bedside nursing service are necessary, benefits would be provided. If, on the other hand, a patient is hospitalized solely for a physical and diagnostic study and is not acutely in need of medical care, liability would be denied.

Pre-Existing Condiitons

Relative to conditions pre-existing the effective date of the contract, the intent of the Blue Cross-Blue Shield Plans is to provide benefits where justified and necessary, and where the coverage was

obtained in good faith without intent to have care provided for conditions known to require hospital and medical services. The attitude of the plans is that a claim is justified where symptoms for the specific condition were not noted prior to the effective date of the contract, or where a condition in the past had obviously become arrested, but exhibited new manifestations after the coverage became effective.

The following method by which the physician may deal with the problem of pre-existing conditions has been suggested by the Blue Cross-Blue Shield Plans. The physician should question the patient as to the date on which hospital, medical and surgical coverage was obtained and should base his suggestion to the patient concerning the liability of the Plans upon the patient's personal case history. If specific symptoms were noted prior to the date on which coverage became available, the physician should point out to the patient the improbability of the services being provided for by the Plans. Although a full investigation will be made in each case and final approval or disapproval will be based upon the information submitted, the physician's opinion in this respect at the time of examination or service will tend to prepare the patient for a possible adverse decision by the Plans.

The cooperation of each Blue Shield physician is requested in continuing successful physician-patient relationships.

NEW MEMBERS

The following doctors have joined the State Association through their respective county medical societies.

Allen, Risden T., Jacksonville
Greene, Leon N., Miami
Holmes, Samuel G., Pensacola
Perlmutter, Irwin, Miami
Plotkin, Paul, Miami Beach
Read, Frances E. M., Jacksonville
Riesenbeck, Leo H., Miami
Romaine, Mason, III, Jacksonville
Sigman, Murray D., West Palm Beach
Strain, Richard E., Miami
Toporoff, Jacob, West Palm Beach
Turner, Gary E., Jacksonville
Wallace, James E., Jacksonville

STATE BOARD OF HEALTH

Mosquito Control

Mosquito control continues to receive public support in the state. This can be demonstrated by the fact that three new counties initiated mosquito projects in 1950, and the 1949 Florida Legislature passed a Mosquito Control Aid Bill.

The following counties have organized mosquito control districts: Dade, Broward, Palm Beach, Martin, St. Lucie, Indian River, Brevard, Volusia, St. Johns, Lake, Pinellas, Hillsborough, Manatee, Sarasota and Lee. In addition, the following counties are now in the process of voting in mosquito control districts: Monroe, Nassau and Bay.

The organized districts will disperse approximately $620,000 raised through taxation in the respective counties during the 1950 season. In addition, the state has contributed approximately $83,000 to the organized districts.

Many of the cities and county health departments carry on mosquito control work, and it is estimated that these agencies appropriate approximately $60,000 a year for this purpose.

The mosquito aid legislation, which carried an appropriation of $350,000, makes it possible for a county to receive assistance in the form of insecticides, materials, equipment, trucks and personnel from the State Board of Health in the amount of $15,000 for any one county.

It can readily be seen that mosquito control is becoming big business in the state. With new insecticides and better equipment it is possible to alleviate the mosquito problem in areas at the present time which were impractical to control in the past.

Many counties along coastal Florida are reaping great benefit from mosquito control in attracting and holding summer tourists, which is adding materially to the income of the citizens of the state.

Physicians should be interested in mosquito control for several reasons. Many species of mosquitoes transmit disease, as is well known, and the role of the mosquito as a pest is of interest to everybody. It is believed that property values throughout Florida will be enhanced considerably with the more effective control of these insects. Much additional knowledge is needed on this subject, and the State Board of Health is engaged in a modest research program in this field through its Division of Entomology.

Reporting Enteric Diseases Early

For years health authorities have reported the decreasing incidence of enteric diseases and particularly of water-borne epidemics of these diseases. It is true that cases of typhoid fever, paratyphoid fever and water-borne bacillary dysentery have become so rare as to be almost extinct. This phenomenon is attributable to sanitary engineering advances in methods of handling and treating public water supplies and sewage, as well as to medical advances in the immunization of large segments of the population and to the treatment of diseases.

Sanitary engineers have long believed, however, that while great strides have been made, much remains to be done to provide all communities with safe water supplies and adequate sewerage systems. Since there are many known instances in which polluted water has been used by a community over an appreciable period of time before correction, it seems unlikely that there has been a complete absence of all forms of enteric epidemics. Actually, physicians and health officials are cognizant of the fact that considerable numbers of unreported cases of enteric disorders occur. This is no reflection upon the medical profession because in many cases these are nonspecific disorders, or, if specific, they are not on the list of reportable diseases. Thus almost every summer the State Board of Health hears rumors of epidemics of intestinal disorders, sometimes after the epidemic has ceased to exist. In many cases physicians have become accustomed to annual epidemics of mild gastroenteritis and fail to be disturbed by such occurrences. Another example of unreported epidemics is the occurrence in epidemic numbers of ear, nose and throat infections among people bathing in a particular bathing place. Skin disorders and fungus infections have been rumored to have occurred at both swimming pools and bathing beaches.

Most of these diseases are preventable if steps are taken at the right time to trace the cause and eliminate it. It is difficult, however, to trace the cause after the epidemic has disappeared. This is particularly true of water-borne epidemics. It is essential that health officers and sanitary engineers know about the epidemic while it is still occurring. It is desirable, therefore, that physicians encountering a number of concurrent cases of the same disease or disorder over a relatively short period of time call the County Health Department or write the Bureau of Preventable Diseases, State Board of Health, Jacksonville, and relate the circumstances observed.

STATE NEWS ITEMS

The presidential address of Dr. Walter C. Payne of Pensacola, which was presented at the 1950 annual convention in Hollywood, was carried in full in the September issue of The Journal of the Medical Association of Georgia. Dr. Payne's address was distributed to state and territorial medical associations by the Public Relations Department of the A.M.A. and has received comment and favorable commendation in several medical journals.

Dr. I. Leo Fishbein of Miami Beach attended the First International Congress of Psychiatry which was held in Paris, France on August 25.

The thirty-sixth annual meeting of the Radiological Society of America will be held in Chicago, December 10-15, according to Dr. Warren W. Furey of Chicago, president of the Society.

Headquarters for the meeting will be the Palmer House in which all scientific and technical sessions will be held. More than 60 papers as well as refresher courses feature the convention program.

Dr. Webster Merritt of Jacksonville was the principal speaker for the graduation exercises of the School of Nursing at Riverside Hospital held in September.

Dr. Mark E. Adams of Jacksonville attended the Southern Obstetric Seminar held in July at Saluda, North Carolina.

The sixth annual meeting of the Southeastern Allergy Association will be held at the Vinoy Park Hotel, St. Petersburg, on Jan. 20-21, 1951. Reservations are to be made individually with the Vinoy Park Hotel, which is on the American Plan.

If you wish to present a paper, contact the secretary immediately. A panel discussion of Allergic Chest Diseases will be under the direction of Dr. Raymond Arp. Dr. Clarence Thomas will head the panel on Rhinological Allergy.

For additional information contact the secretary, Dr. Katharine Baylis MacInnis, 1515 Bull Street, Columbia, S. C.

Dr. Carlos P. Lamar has resumed his practice in Miami following his return from Augusta, Georgia, where he gave a series of lectures at the University of Georgia School of Medicine.

Dr. Scottie J. Wilson of Ft. Lauderdale addressed the Miami Dietetic Association recently in the shelter of the Casino in Ft. Lauderdale.

Dr. Allen S. Shepard has resumed his practice in Key West following his return from New York City where he attended a course in postgraduate study.

Dr. C. Burling Roesch of Jacksonville recently addressed the active and inactive American Red Cross first aid instructors at the John Gorrie Junior High School.

Dr. Zaven Seron of Sebring was the guest speaker at a recent meeting of the local Rotary Club.

Dr. Egbert V. Anderson of Pensacola is one of Florida's delegates who will attend President Truman's midcentury White House conference on children and youth in December.

Among the Florida doctors who attended the first worldwide heart conference held in Paris, France, September 3-9, were Drs. Arthur J. Bieker, St. Petersburg, and Russell W. Ramsey, Winter Park.

The annual meeting of the Southeastern States Cancer Seminar will be held in Jacksonville, November 8-10, at the George Washington Hotel. See the commentary section of your October Journal for more detailed information on this Seminar.

Dr. Henry G. Sweany of Chicago has become the chief medical director of the state's tuberculosis sanatoriums. Dr. Sweany comes to Florida following thirty years' experience as director of research and laboratiories at the Municipal Tuberculosis Sanitarium in Chicago.

WANTED: Resident physician for hotel in Miami area November 20, 1950 to May 1, 1951. Florida license necessary. Salary $500.00 month and maintenance. Single man preferred. Write 69-42, P. O. Box 1018, Jacksonville, Fla.

Dr. Ashbel C. Williams of Jacksonville presided at the August meeting of the Florida division of the American Cancer Society which was held in Tampa.

Dr. Reuben B. Chrisman, Jr., secretary of the Dade County Medical Association has been invited to speak on Dade County Public Relations at the annual A.M.A. Public Relations Conference in Cleveland, Ohio, in early December.

Dr. Harrison G. Palmer of St. Petersburg has returned from a tour of northern states. While in Michigan, he attended the Michigan State Medical Society Convention which was held in Detroit.

President Herbert E. White of St. Augustine, chief of the medical and surgical staff of the Flagler Hospital, has moved his offices into the recently completed addition to the hospital building.

BIRTHS AND DEATHS

Births

Dr. and Mrs. Edward R. Annis of Miami announce the birth of a daughter, Kathleen Deborah, on September 6, 1950.

Dr. and Mrs. Robert F. Farrington of Miami announce the birth of a daughter, Diana, on August 22, 1950.

Dr. and Mrs. Joseph Farrington of Jacksonville announce the birth of a daughter on July 22, 1950.

Dr. and Mrs. Arthur L. Hardie, Jr., of Jacksonville announce the birth of a son on September 3, 1950.

Deaths — Members

Norris, Samuel R., Jacksonville ..... Sept. 21, 1950

A. M. A. Public Relations Conference

December 3-4, 1950

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COMPONENT SOCIETY NOTES

Columbia

The October meeting of the Columbia County Medical Society was held in Lake City Monday, October 2, with Dr. Thomas H. Bates presiding. A motion picture of the A.M.A. 1950 convention recently held in San Francisco was shown to the members of the society by W. Harold Parham, supervisor of the F.M.A. Bureau of Public Relations. Guests at the meeting were doctors of the staff of the Veterans Administration Hospital in Lake City.

Dade

The Dade County Medical Association held its regular monthly meeting on October 3 at the Miami Woman's Club. The scientific program was headed by Dr. Joseph W. Scott, who discussed "The Early Diagnosis and Treatment of Carcinoma of the Cervix and Body of the Uterus."

Duval

The regular monthly meeting of the Duval County Medical Society was held in the Sellers Auditorium Tuesday, October 3. Guest speaker was Dr. Hal McC. Davison, Atlanta, who presented a paper on "Psychosomatics in Allergy."

The scientific program was preceded by the showing of a motion picture of the 1950 A.M.A. annual convention held in San Francisco in June. The film was made available to the society through the F.M.A. Bureau of Public Relations and was shown by W. Harold Parham, Bureau supervisor.

Marion

At the September meeting of the Marion County of the Marion County Medical Society, the guest speaker was Dr. Charles E. Tribble, mayor of DeLand and past-president of the Volusia County Medical Society. Dr. Tribble presented a paper on "The Doctor and His Community."

The following members were present: Drs. William H. Anderson, Jr., Hugh H. Barfield, Richard C. Cumming, Bertrand F. Drake, Henry L. Harrell, John D. Lindner, Carl S. Lytle, William J. McGovern, Robbins Nettles and Thos. H. Wallis, Ocala; Matthew Arnow and Clifford E. Vinson, Williston; and Herbert M. Webb, Jr., Wildwood.

Pinellas

The first fall meeting of the Pinellas County Medical Society was held at the Detroit Hotel, St. Petersburg, on September 11, with Dr. Albert R. Frederick presiding. On the scientific program, Dr. Paul S. Wallace gave an illustrated lecture on "Fibro-elastic Diathesis of Mesenchymal Tissue."

Dr. Whitman C. McConnell, secretary, presented proposed amendments to the By-Laws as approved by the executive committee.

OBITUARIES

Warren Edward Anderson

Dr. Warren E. Anderson of Pensacola died unexpectedly on Aug. 21, 1950 at his Fisherville home near Warrington. He was 58 years of age.

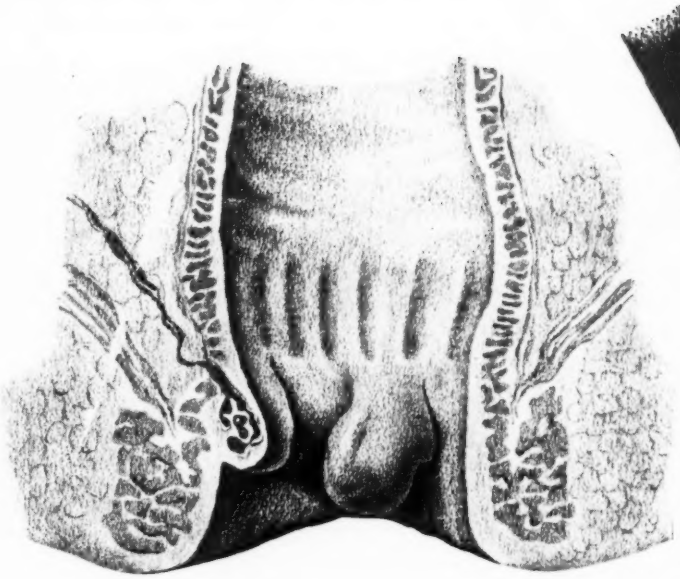
The son of the late Dr. Warren Anderson and Catherine Hargis Anderson of Pensacola, Dr. Anderson was born there in 1892. He received his medical education at the Emory University School of Medicine in Atlanta, Ga. Upon graduation in 1916, he returned to his birthplace to practice medicine.

For seventeen years a general practitioner and surgeon in Pensacola, Dr. Anderson was a past president of the Sacred Heart Hospital staff and was one of the four founders of the Pensacola Maternity Hospital.

Dr. Anderson was a veteran of World War I. Interested in politics, he was elected in 1948 to the Democratic National Convention, running as a state-at-large candidate.

He was a member of the Escambia County Medical Society, the Florida Medical Association and the American Medical Association.

Surviving are his widow, Mrs. Sophie Anderson of Fisherville; seven brothers, Robert H., Thomas and Frederick of Miami; Roulhac, William D. and Richard S. of New York, and J. Berwick of Green Cove Springs; and two sisters, the Misses Modeste and Catherine Anderson of Pensacola.



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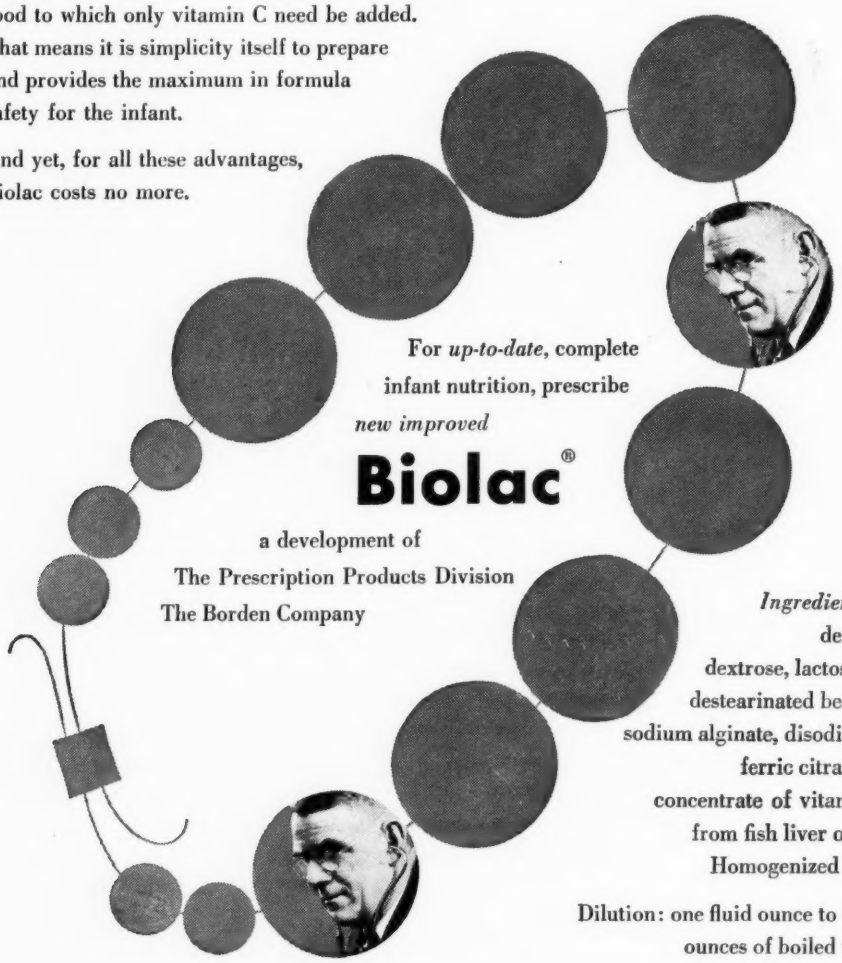

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Dilution: one fluid ounce to one and a half ounces of boiled water for each pound of body weight.

Biolac is available in 13 fluid ounce tins.

The Borden Company, Prescription Products Division
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William Frederick Bay

Dr. William F. Bay of Bradenton died on April 4, 1950 after suffering a cerebral hemorrhage. He was 77 years of age.

Born at Marietta, Ohio, on May 14, 1873, Dr. Bay received his medical degree from Ohio Medical University in Columbus in 1894. He was licensed to practice medicine in Florida in 1938 and the following year became a member of the Florida Medical Association. In 1940 and 1941 he did postgraduate work at the University of Michigan.

Dr. Bay practiced in Columbus, Ohio, before coming to Florida twelve years ago. He served in World War I and World War II.

In addition to membership in the Florida Medical Association, Dr. Bay held membership in the Manatee County Medical Society and the American Medical Association.

He is survived by his widow, Mrs. Mabel Bay, now residing in Bradenton.

Wilson McArthur Lancaster

Dr. Wilson McArthur Lancaster of Orlando died at the Osceola Hospital in Kissimmee on Aug. 15, 1950. He was 66 years of age.

Dr. Lancaster was born in Ontario, Canada, in 1885. He received his medical degree in 1909 from the University of Western Ontario Faculty of Medicine at London in his native province.

He then practiced medicine in Wahpeton, N. D., until he moved to Kissimmee in 1932. He established the Osceola Hospital there, which he operated until 1947. At that time he moved to Winter Park and became associated with his daughter, Dr. Avaline Lancaster Cannon, in the practice of medicine, with offices in Orlando.

This well known Osceola and Orange County physician and surgeon was a member of the Orange County Medical Society, the Florida Medical Association and the American Medical Association. He was a communicant of St. John's Episcopal Church in Kissimmee.

Surviving are his widow, Mrs. Minnie E. Lancaster; two sons, Donald B. Lancaster of Pine Castle and Robert M. Lancaster of Kissimmee; one daughter, Dr. Cannon; one brother, Dr. Blake Lancaster of Bradenton; one sister, Mrs. F. A. Staples of Toronto, Canada; and six grandchildren.

Advertisement

From where I sit *by* Joe Marsh

Ought To "Polish Up" Her Traffic Manners!

Spent most of yesterday over at the Court House. "Tiny" Fields, the biggest and fastest-talking of our three policemen, was holding forth about his traffic troubles.

"Women drive just as good as men do," Tiny said, "and just as bad. For instance—a girl in a convertible today. She started a three-block tie-up all by herself.

"She's creeping down Main Street —left hand stuck out and sort of waving around. Never turns right or left, never stops. But, of course, everyone behind her thinks she's signaling about something. Nobody dares to pass. When I stop her and ask what's up, she smiles sweetly and explains that she's drying her nail polish!"

From where I sit, that girl's typical of certain folks who are so wrapped up in themselves, they never notice they're not being fair to others. Our neighbor has a *right* to drive in safety —just as he has a right to enjoy a glass of beer. Let's all respect the other fellow's rights.

Joe Marsh

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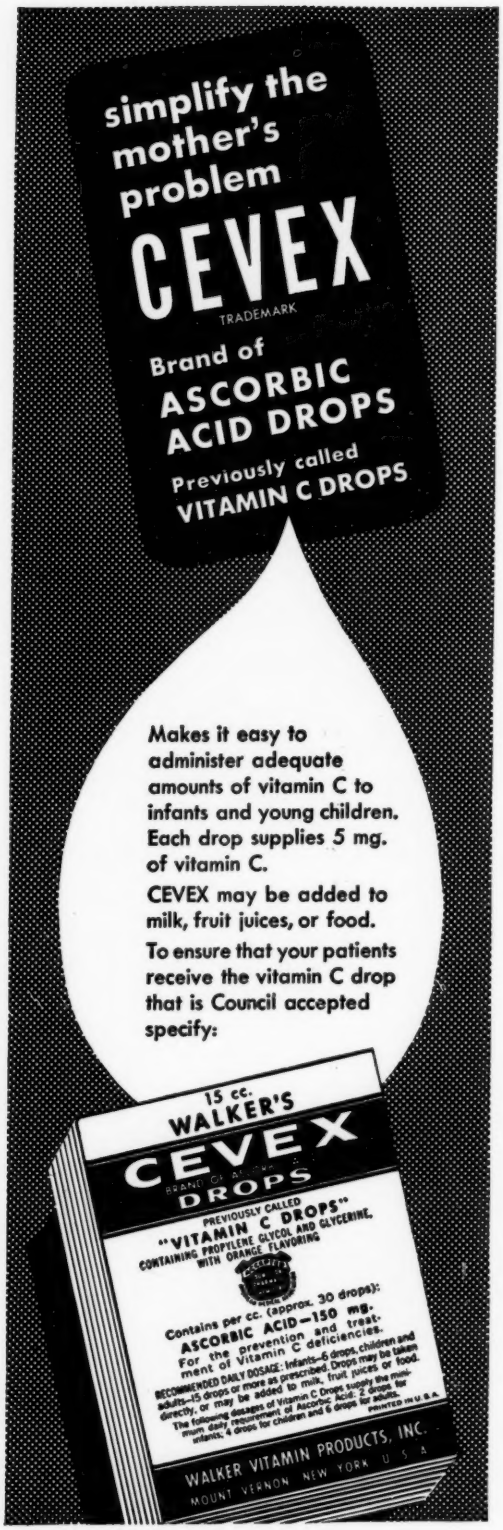
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What Every Doctor Should Know

In one of his convention addresses, Dr. Elmer Henderson, president of the American Medical Association brought before the doctors the startling fact that the Woman's Auxiliary had grown in size to over 50,000 members from what he recalled as a skeleton organization ten years ago. "There must be a reason for that," he said.

There is a reason. In the days of skeletal structure women were doing what I am doing now, urging doctors and their wives to recognize the value of membership in this organization so that when we have a real objective and something to work for we shall have something with which to work.

Ten years ago the doctors' attitude was different. This was because they have always had a strong organizational structure manned by able, conscientious doctors who guided the affairs medical. But, when a calamity threatened there was immediate mobilization of individuals from every county in the country. With the doctors who rallied to medical defense came their wives. It's as simple as that.

Yet, we have much work to do for as Mrs. Leo Shaefer, National Organization Chairman, said, "The American Medical Association reports an active membership of 144,500 doctors. Compare that to 50,000 doctors' wives."

Is is possible that over 90,000 doctors' wives don't know about the Auxiliary? I can't believe that that many could know of our organization and the work it has done for the doctors of America and be willing not to share in its future. Is it

possible that even half that number are disinterested in the future of medicine? It is more likely that we are remote to many because their husbands haven't shown the way and we haven't yet reached them.

Imagine the tremendous influence of 289,000 people actively opposing socialized medicine, socialism, and communism. Each in his own sphere of influence educating his friends and daily contacts would start up a chain reaction which couldn't be beat.

How can this be accomplished? Through the doctor. If his wife stands by his side to be counted the active A.M.A. membership number is doubled in effectiveness. This every doctor should know.

Mrs. C. Robert DeArmas,
President-elect.

BOOKS RECEIVED

PHYSICIAN'S HANDBOOK. By Marcus A. Krupp, M.D., Norman J. Sweet, M.D., Ernest Jawetz, Ph.D., M.D., and Charles D. Armstrong, M.D. Ed. 6. Price, $2.50. Pp. 380. Palo Alto, Cailf.: University Medical Publishers, 1950.

This handy pocket reference for both student and physician offers a readily available source of factual data, laboratory procedures, and clinical aids repeatedly used in all branches of medicine. In this sixth edition all sections have been completely revised and often expanded; there are 86 more pages than in the previous edition. Further emphasis has been given to basic principles which aid in understanding the material presented. Among the new sections are those dealing with electrocardiography, electroencephalography, radioisotopes, and simplified laboratory procedures.

The original authors and publishers, Dr. John Warkentin and Dr. Jack Lange, finding it impossible to maintain adequate revisions, met this problem with the present edition by enlisting the aid of new authors who restrict their writings to those portions of the Handbook with which they are thoroughly familiar.

NEW AND NONOFFICIAL REMEDIES, 1950. Issued Under the direction and Supervision of The Council of Pharmacy and Chemistry, American Medical Association. Price, $3.00. Pp. 800. Philadelphia: J. B. Lippincott Company, 1950.

This annual publication was made available in August this year. In it are listed and described articles which the Council on Pharmacy and Chemistry of the American Medical Association found acceptable up to Jan. 1, 1950. The book provides statements on actions, uses, dosage, tests and standard of the preparations and articles. It also contains certain official preparations and other articles including drug substances for manufacturing use for which there are not official standards, which the Council is of the opinion should be included for the information of the medical profession.

PHYSICIANS of the South have an urgent call to St. Louis for the annual meeting of the **Southern Medical Association,** Monday, Tuesday, Wednesday and Thursday, November 13-16. Medical meetings are essential in times of war as well as in times of peace. In the light of the world situation today this meeting of the Southern Medical Association may be the last complete general medical meeting to be held for some time to come. With this thought in mind, it is very important that all physicians take advantage of this opportunity to bring themselves up to date on the latest developments in the profession.

THE ST. LOUIS meeting will be one of the most complete medical meetings ever offered to the profession. Every phase of medicine and surgery will be covered in the general clinical sessions, the twenty-one sections, the five conjoint meetings and the scientific and technical exhibits.

REGARDLESS of what any physician may be interested in, regardless of how general or how limited his interest, there will be at St. Louis a program to challenge that interest and make it worthwhile for him to attend.

MEMBERS of state and county medical societies may attend. Eligible physicians, members of state and county medical societies in the South can be and should be members of the Southern Medical Association. The annual dues of $8.00 include the Southern Medical Journal, a journal valuable to physicians of the South, one that each should have on his reading table.

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